KNOWLEDGE CENTER
OPERATING SYSTEMS

In the Slow Lane



thousands of IT managers are trying to figure out how to exploit the Linux phenomenon, switch from IBM's older operating systems to z/OS or upgrade from Microsoft's aging Windows NT Server.

lere's a rare look at those users on the ging edge. Stories gin on page 27.

Online Exclusive ngs every IT man

Billions Needed to Meet Drug Bar-Code Mandate

FDA order targets drug makers, but hospitals will have to pay for underlying IT infrastructure

The Food and Drug Adminis tration last week mandated that drug companies out bar codes on all drugs dispensed

in hospitals as a means of reducing medication errors. Hospitals welcomed the pros pect of error reduction, even though as an industry they

will have to spend billions to deploy the technology. The regulations apply only to drug manufacturers and not to hospitals. But as a practical matter, hospitals will need bur code readers and the networks and systems to support them.

The FDA out the cost of deploying those systems at about \$7.2 billion Hospitals don't appear to be balking at the hefty price tag,

because many see it as a Richard Coorsh, a spokesman for the Federation of American

Hospitals, a Washseton-based association of large, investor-owned hospita companies, said his organization has solidly backed the bar-code regulations. "We believe it will improve care and save lives," be said. The FDA requirement for

For example, IBM in Sep-

tember shipped Version 8 of its DB2 Content Manager

package, which was rewritten

from the ground up to im-prove scalability and add fea-

tures such as tighter ties to

DB2 and to the company's

WebSphere Application Ser er software. Last week, IBM

said it plans to release another

IBM, page 61

according to Jane Englebright. vice president of quality at HCA Inc. in Nashville. In testi mony at an FDA hearing last year, Englebright said the lack of standard bar codes required hospitals to repackage and add Bar Codes, page 61

money for hospitals that have already started to deploy medication management systems.

IT Systems at U.S. Borders Found Lacking Nation challenged to

build infrastructure to

support biometrics BY DAN VERTON

The prospect of war in Iraq has raised new concerns about the Department of Homeland Security's progress in deploying the IT infrastructure needed to improve border security Testifying at a Senate Iudi ciary Subcommittee hearing last week, Asa Hutchinson, the department's undersecretary for border and transportation security, said the DHS would likely meet the Dec. 31 deadline for deploying a new entry/exit system at the nation's airports and seaports. But be said the 2004 and 2005 deadlines for deploying the full ar-

ray of IT systems along the land borders with Canada and Mexico could prove too difficult and expensive to meet. Border Security, page 16

IBM Expands Content Offerings database," she added

Software upgrade ties electronic documents to CRM applications

BY CRAIG STEDMAN

IBM last week announced upgrades of two content man ment tools and said it will ship additional features later this year as part of an effort to broaden its support for managing corporate information

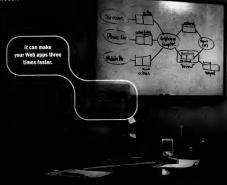
other than relational data. lanet Perna, general man er of IBM's data management division, said at a briefing here that the company's flagship DR2 database is being used

under the hood of the content ment technologies. But the DB2 product line now

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In the Slow Lane

Leading-edge users have already moved to Linux 2/OS and the latest Windows. Then there's the rest of us. This special report provides useful information for the legions of lagging-edge users who are new to Linux or haven't vet moved to the latest versions of the server operating systems



from IBM and Microsoft. PACKAGE REGINS ON PAGE 27. 30 The Story So Far. The development of operating systems began in 1955, when General Motors cre-

- ated a batch-processing monitor. 34 Still on Windows NT. Despite Microsoft's best efforts to push them into upgrades, legions of Windows NT Server users aren't ready to move up or haven't finished their migrations. Some say that NT 4.0 works just fine, thank you.
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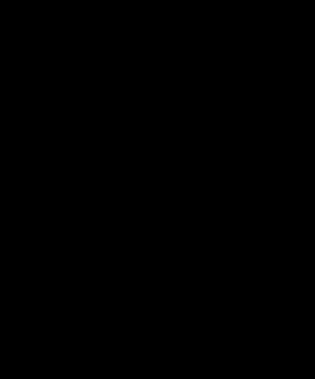
ing those of vendors such as IBM, HP, Red Hat. SCO and SuSE O Dated by 30275

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54 The Next Chapter: In a collection of predictions about server opera ing systems, pundits say that the OS will become vital to Web services. And that Linux will become hunely successful, but fragmented like Unix.



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president of technology walks

de's Christopher Burry

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AT DEADLINE

Symbol Says SEC May File Charges mbol Technologies Inc., a maker of bar code scanners and

was notified that the U.S. Secu rities and Exchange Commay push for civil charges net the company as part of counting investigation. rille, N.Y.-based Symbol nico delayed until June a plac ent of its fine suits dating back to 1999

Intel Rolls Out **Ethernet Devices**

Intel Corp. today will announce a ries of Ethernet networking wices, including a Digabit Ethet controller for PCs and a 10 Gleabit Ethernet network in orface card for servers. The interface card costs \$7,995 and is ned to comment I felf-framed servers to corporate networks so they can run bandwidth-hungry

cations such as Imaging, rding to Intel officials. White House Tans

Coca-Cola II Fred that the president plans to name Robert Lincounki, currently director of information assurance at The Coca-Cola Co. in Atlanta, to be assistant secretary of infra-structure protection within the v U.S. Department of Hom and Security, Lincounts's acent could be armounced as

Short Takes

Ming firm ACCENTURE LTD, said it laid off about 780 employees, primarily in the U.S. The cuts reduced the company roe by 1%, but A said it expects a not increase in head count during its current fis-cal year. . . . WORLDCOM INC. said it wrote off \$79.8 billion or accets as part of its bank-

Intel Launches Centrino: Wi-Fi Support Still Lags

Mobile technology can access only older 802 IIb nets

W NTEL CORP launched its much-heralded Centrino mobile technology last week. But unless users are willing to accept relatively slow Wi-Fi access, they will have to wait until the oext quarter to per notebooks certified by Intel as Centrino-compatible. Centrino consists of a newly

designed low-power-drain Pentium-M chip set and a PRO/Wireless mini-PCI card that handles W. El compacted. ry. Intel will offer four standard versions of the Pentium-M running at speeds of 1.6, 1.5, 1.4

and 1.3 GHz. Intel has conted the Wi-Fi capabilities of its Centrino architecture and has made highprofile partnerships with Wi-Fi public-access networks and operators [QuickLink 36929]. But Centrino's built-in Wi-Fi can access only older 802.11b

wireless networks, which transmit raw data at a rate of IIM bit/sec. It doesn't support the Wi-Fi 802.lla or 802.lls standards, both of which provide 54M bit/sec. data speeds. We had originally planned to Introduce Centrino with dual-band, both 'a' and 'b," Daniel Francisco, an Intel spokesman, said on Friday. We announced in December

that the dual band would be delayed due to us having to do some additional engineering on 'a.' We will have dual-band [802.11 a and b] out by the end of the second quarter of 2003. As for 'g' we believe an a/b/g tri-band solution makes sense and we'll look at it when the 'g' specification is completed." The Wi-Fi Alliance expects to start certifying 802.llg prod-

ucts this summer. Rich Redelfs, president and CEO of Atheros Communications Inc., a wireless LAN chin

manufacturer in Sunnyvale, Calif., said notebook veodors have the option of using the Pentium-M processor that's at the heart of the Centrino techchip sets in the year future. Major hardware manufacturers that have signed on to

nology with Atheros 802.11a/b WLAN chip sets pow, and with 802.llg or combined 802.lla/b/g use the Atheros 802.11 chip sets include Hewlett-Packard Co., IBM, Toshiba Corp. and NEC Corp. But Intel - which

of the "Banns" low-power AT&T Corp. and IBM to de

trino-compatible" loso on their products unless they incorporate both the Pentium-M processor and its Wi-Fi mod-

with a \$300 million advertis-

ing campaign - won't allow

manufacturers to slap a "Ceo-

ule. IBM and HP, in addition to offering the Atheros option, are among the top-tier notebook vendors that offer fully compatible Centrino products. Many large enterprise users view Wi-Fi as a business essential. Tony Scott, chief techis backing the Centrino launch | pology officer at General Mo-

tors Corp., said he plans to support thousands of traveline workers with WisFi Scott called the increase in battery life promited by Centrino a "great step forward" and noted that GM intends to upgrade wireless LANs in its plants Analysts expect Intel to three Wi-Fi standards into the

from 802.11b to 802.11g. eventually incorporate all Centrino architecture, and they view that as the begin ning of the end of outboard Wi-Fi packaged in a PC Card. Keith Warvas, an analyst at IDC in Framingham, Mass. said the use of PC Cards for wireless LAN connectivity "will eventually on away" as Centrino-equipped notebooks replace older models.

may PCI card on Centron.

Microsoft Steers Apps Toward Collaboration

BY MARC L. SONORH Microsoft Corp. this week will detail plans to push out technology designed to simplify software integration and to support increased collaboration capabilities for users of its business applications. At its Convergence 2003 conference in Orlando, Microsoft

will try to sell users on the idea that its applications can be used to integrate various business processes, said Lynne Stockstad, general manager of obal solutions at Microsoft's business solutions unit. For example, companies could link their employees and business partners in automated workflows that support customer relationship management (CRM) supply chain operations and

other activities, she said As port of the strategy, Microsoft will unveil integration and user-interface enhance-

ments to simplify development of collaborative applications. Stockstad said. She was sketchy on the details but did say the plan includes adding an enduser portal or a similar rolebased interface that will give workers a view of the business functions relevant to their jobs.

Mixing It Up

Integration is a major issue for Tom Racca, vice president of sales and marketing at iQ Net-Solutions Inc. in Westboro. Mass. IO NetSolutions, which makes telecommunications pment, runs Microsoft's Great Plains back-office applications and its new CRM software in a hosted installation. Racca, who plans to attend the Convergence conference, said it's particularly important for him to see continued im-

provements in the integration

between the Microsoft CRM

and Great Plains applications. He said he also wants to combine the different functions of the applications into a portalstyle user interface and open

up the systems to his company's business partners. The integration moves planned by Microsoft are key requirements for the midsize companies that the software vendor is targeting with its applications, said Katherine Jones, an analyst at Aberdeen

Group Inc. in Boston Companies at that level often are plagued by continued reliance on repetitive manual processes that boy down productivity, such as having to copy customer information from one application to anot er, Jones said. Adding a portal isn't a unique step on Microsoft's part, but it could help end users do their jobs more efficiently, she said.

APPLICATION-AWARE

av JAMES NICCOLAI Microsoft Corp. plans to adjust its per-processor licensing model to provide relief for customers that run its software on parti-

Microsoft executive said tast week. On April 1, the company will introduce per-processor li-centing terms for eight server products to provide a fairer opion for customers that use partitioning, said Rebecca LaBrunerie, head of Microsoft's licensling program. Uoder the new system, businesses will pay for only the processors that the software runs on, rather than for every process-

sor in a partitioned server.

she said.

The change could lead to significant cost savines for customers that use partitioning to segregate applications running on a single multiprocessor server, said Alvin Park, an analyst at Gartner Inc. in Stamford, Conn. Some of those customers have complained that Microsoft's current pricing system requires them to pay a license fee for each processor on their servers, even though the software may not actually be running on all of them. Park said. Using partitioning to cut licensing costs can be complex from a technology standpoint, but the oew model offers the potential for big savings for some customers, Park said. The issue main-

ly affects customers that controllate single- or dual-processor servers onto larger systems as a way of cutting hardware and systems management costs, be said. LaBrunerie said the new model will be "a lot more fair and logical" than the current system for customers that use

management costs, to said. LaBrunerie said the new model will be "a lot more fail and logical" than the current system for customers that us partitioning. Server consolidation is a growing trend among businesses seeking ways to cut IT costs, and the new pricing seeks to address that, she said.

More Flexibility John Bielec, CIO at Drexel University in Philadelphia, said the new pricing structure

will likely help the university cut costs as it continues to replace and consolidate servers. The new pricing "will give us flexibility in terms of moving [Microsoft server applications] from smaller to larger servers and not getting hit with larger costs" for licensing, he said. Dread uses two of the

whith tagget costs or in Recessing, the said. Dreated utes two of the affected Microsoft server products, SQI, Server 2002. Drew el replaces about one-third of its hardware annually, Bielec soid, adding that be expects the savings from the new pricing structure to be reflected in his budget after July 1.

The model eventually will be extended to Microsoft's Windows 2000 server operating system, LaRuserie said. The company recently acquired technology from Connectic Corp, in hopes of providing software that will let a single Windows server act as a series of reparate machines. Microsoft will discuss pricing changes for Windows, 2000 when that virtualization software in art leased. I all Purserie said.

The new model will also apply to earlier versions of the eight Microsoft products affected by the change, although the company won't offer refunds to customers that have already paid for software they're running oo partitioned servers. Those customers will be able to reset licenses that

ship R/3 software. The prod-

tions that were previously

sold separately, including

SAP's portal and business-

Deborah Schmidt, global

solutions at SAP, said mySAP

ERP users will also get built-in functions from other applica-

tions, such as tools for analyz-

nancial data, SAP is exploiting

ing human resources and fi-

the NetWeaver integration

technology it announced in lanuary to add functionality to

the ERP software without re-

quiring users to buy licenses

special pricing for mySAP

ERP but didn't disclose details.

Tom Ackerman, senior di-

rector of business information

systems at R/3 user Symbol

Technologies Inc. in Holts-

ville. N.Y., said the plans out-

lined by SAP should provide

ties and more user interface

flexibility. Those are "two im-

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suite, Schmidt said. She added that there will be

for all the pieces of its mySAP

vice president of enterpris

to-business marketplace

software

uct bundles R/3 with applica-

are freed up by the new system, Microsoft said. For example, under the current model, a user running SQJ. Server on a partitioned eight-way server is paying for eight processor licenses, even though the software might be running on only four processors. When the new model kicks in on April I. that customer will have four unused SQL Server licenses in hand, LaBrunerie said. The changes apply only to

customers on per-processor licenses and doo't affect the client/server access license model, Park said.

Niccolai writes for the IDG News Service. Computerworld's Todd R. Weiss con-

tributed to this report.

SAP Bundles R/3, Other Apps in New ERP Release

SAP AG last week said it's been missing from traditional rolling out a beefed-up version ERP offerings," he said. of its enterprise resource plan-MySAP FRP also includes ning (ERP) software aimed at support for automating backusers who are daunted by the office administrative services. prospect of buying and insuch as management of real stalling a full set of the comestate, travel expenses and payments of commissions and pany's applications. Announced at the CeBIT other incentives, said lim 2003 conference in Hanover Sheeherd on enalyst at AMR Germany, mySAP ERP is the Personal Inc. in Boston newest release of SAP's flag-

Research Inc. in Boston. The new release is available now. SAP also announced a professional services automation application designed to let companies in service industries automate the management of their operations.

SAP rival PeopleSoft Inc. also used the CeRIT show to announce an integration move, detailing plans to provide links to instant messaging and collaboration technology from IBM, Microsoft Corp. and Yahoo Inc. in its end-user portal and other applications. Paola Lubet, vice president of marketing for PeopleSoft's AppConnect integration tools. said Version 8.8 of the company's Enterprise Portal software will also include new capabilities to help IT managers develop intranet sites for groups of end users who need to collaborate with one another

rate with one another.

The portal upgrade will be available this week, although the instant messaging connections aren't due until the fourth quarter, Lubet said.

Plattner Ends Management Role

SAP last week said Hasso Platina, its co-CEO and chairman, will give up those jobs and step away from a fait-time management role at the conpany he halped found in 1972. Patrina, who will become head of SAP's supervisory board,

efter the annuncement.
WIE SAP's strategie direction absolute when Henning
Kagarranana becomes the

Regarded to the control for soils CEO? I don't beak so. I've exched with Finening for 21 years, and we set out the strategy over the best years together. I'll alligher on active role in the

But all this time, this has been the way we've run the compan — not by benting orders, but by convincing people to do things Pretty much we've been a con-

What has been your main contribution to SAP? I like to highly the creative robe and took for thorty to live creatively and more things and, with the help colleagues, bring them tell probables and make money. Probably read to that, my boot ability is to see

consisting in maching in mask and to start bridge about what is the most thing to do. —Marc E. Sonat

MICROSOFT PRICING

AT DEADLINE

Symbol Says SEC May File Charges Symbol Technologies Inc., a

maker of bar code scanners and other wireless devices, said it was notified that the U.S. Secu rities and Exchange Conve may push for civil charges inst the company as part of an accou Holtsville, N.Y.-based Symbol also delayed until June a place ment of its financial re-

rults dating back to 1999. Intel Rolls Out

Ethernet Devices Intel Corp. today will announce a series of Ethernet networking devices, including a Gigabit Eth ernet controller for PCs and a 10 Gigabit Ethernet network in ice card for servers. The inace card costs \$7,995 and is designed to connect LAN-based vers to corporate networks so they can run bandwidth-hung stions such as imaging, according to Intel officials.

White House Tans Coca-Cola IT Exec

that the president plans to name Robert Liscouski, currently direc The Cora-Cola Co in Atlanta In be assistant secretary of infranew U.S. Department of Home-land Security. Liscouski's apent could be announced as early as this week, sources said

Short Takes

IT consulting firm ACCENTURE LTD. said it laid off about 760 ees, primarily in the U.S. The cuts reduced the company's workforce by 1%, but Accenture said it expects a net increase in head count during its current fiscal year. . . . WORLDCOM INC.

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Intel Launches Centrino: Wi-Fi Support Still Lags

Mobile technology can access only older 802.11b nets

NTPL CORF launched its much-heralded Centrino mobile technology last week. But unless users are suitting to account solutionly close. Wi-Fi access, they will have to wait until the next quarter to get notebooks certified by Intel as Centrino-compatible. Centrino consists of a newly designed, low-power-drain Pentium-M chip set and a

PRO/Wireless mini-PCI card that handles Wi-Fi connectivi to latel will offer from stop had versions of the Pentium-M running at speeds of L6, L5, L4

Intel has touted the Wi-Fi capabilities of its Centrino architecture and has made high profile partnerships with Wi-Fi public-access networks and operators [QuickLink 36929]. can access only older 802.1th wireless networks which transmit raw data at a rate of

IIM bit/sec. It doesn't support the Wi-Fi 802.lls or 802.llg standards, both of which provide 54M bit/sec. data speeds. *We had originally planned to introduce Centrino with dual-band, both 'a' and 'b.' Daniel Francisco an Intel spokesman, said on Friday. "We announced in December that the dual band would be delayed due to us having to do some additional engineering on 'a.' We will have dual-band [802.11 a and b] out by the end of the second quarter of 2003. As for 'g' we believe an a/b/g

tri-hand solution makes sense. and we'll look at it when the g' specification is completed." The Wi-Fi Alliance expects to start certifying 802.1lg products this summer. Rich Redelfs, president and CEO of Atheros Communications Inc., a wireless LAN chip

Calif., said notebook vendors have the option of using the Denium-M processor that's at the heart of the Centrino technology with Atheros 802 fla/h chip sets in the near future. Major hardware manufacturers that have signed on to use the Atheros 802.11 chip

802.Hg or combined 802.Ha/b/g sets include Hewlett-Packard Co., IBM. Toshiba Corp. and NEC Corp. But Intel - which is backing the Centrino launch

of the "Basses" innerconn

their products unless they incorporate both the Pentium-M. recovering and its Wilki module. IBM and HP, in addition to offering the Atheros option, are among the top-tier notebook vendors that offer fully compatible Centrino products Many large enterprise users view Wi-Fi as a business essential. Tony Scott, chief technology officer at General Mo-

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INTEL'S CENTRING TIMELINE Forms Corneta Networks will

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www.compulerworld.com

wireless LANs in its plants from 802.11b to 802.11e eventually incorporate all three Wi-Fi standards into the Centrino architecture and they view that as the begin nine of the end of outboard Wi-Fi packaged in a PC Card. Keith Waryas, an analyst at IDC in Framingham, Mass. said the use of PC Cards for wireless LAN connectivity "will eventually go away" as Centrino-equipped notebooks replace older models.

Changes name of mobile processor arch-Expects to offer an 802 Ita/b tecture Iron Banas to Cereno. nin-PCicardon Centino

a nationwide Wil-Fr network. JAN 2003 **MARCH 2003**

0012000 DEC 2002 Announces that Banas will use a non-PCI card that can support only 802 fills Wi-Fi Lauriches Centring with an because of engineering problems with a chip mount to support the 802 Na standard

Microsoft Steers Apps Toward Collaboration

ATAT Com. and IBM to develop

Microsoft Corn this week will detail plans to push out technology designed to simplify software integration and to support increased collaboration capabilities for users of its business applications. At its Convergence 2003 con

ference in Orlando Microsoft will try to sell users on the idea that its applications can be used to integrate various business processes, said Lynne Stockstad, general manager of global solutions at Microsoft's business solutions unit. For example, companies could link their employees and business partners in automated workflows that support customer relationship management (CRM),

supply chain operations and other activities, she said. As part of the strategy, Microsoft will unveil integration and user-interface enhance-

ments to simplify development of collaborative applications, Stocketed said. She was abotely on the details but did say the plan includes adding an enduser portal or a similar rolebased interface that will give workers a view of the business. functions relevant to their jobs.

Mixing It Up Integration is a major issue for

Tom Racca, vice president of sales and marketing at iO Net-Solutions Inc. in Westborn Mass. IQ NetSolutions, which makes telecommunications equipment, runs Microsoft's Great Plains back-office applicarions and its new CDM soft. ware in a bosted installation.

Racca, who plans to attend the Convergence conference. said it's particularly important for him to see continued improvements in the integration between the Microsoft CRM

802 th ma-PO card and Great Plains applications.

He said he also wants to combine the different functions of the applications into a portalstyle user interface and open up the systems to his company's business partners. The integration moves planned by Microsoft are key

requirements for the midsize companies that the software vendor is targeting with its applications, said Katherine Jones, an analyst at Aberdeen Group Inc. in Boston.

Companies at that level often are plagued by continued reliance on repetitive manual processes that bog down productivity; such as having to conversioner information from one application to anoth er, Jones said. Adding a portal isn't a unique step on Microsoft's part, but it could help end users do their jobs more efficiently, she said &

APPLICATION-AWARE

Questink k2000

New model could mean significant cost savings for customers that use partitioning

BY JAMES NICCOLAL Microsoft Corp. plans to adjust model to provide relief for

customers that run its software on partitioned servers, a Microsoft executive said last work

On April L the company will introduce per-processor licensing terms for eight server products to provide a fairer option for customers that use partitioning, said Rebecca LaBrunerie, head of Microsoft's licensine program. Under the new system hosinesses will pay for only the processors that the software runs on. rather than for every processor in a partitioned servet,

The change could lead to significant cost savings for customers that use partitioning to segregate applications running on a single multiprocessor server, said Alvin Park, an analyst at Gartner Inc. in Stamford, Conn. Some of those customers have complained that Microsoft's curreot pricing system requires them to pay a license fee for each processor on their servers, even though the software may not actually be running on all of them, Park said.

Using partitioning to cut li-WIGROSOFT PRICING

censing costs can be complex from a technology standpoint, but the new model offers the potential for hig savines for some customers, Park said. The issue main-

LICFRISING ly affects customers that consolidate single- or dual-processor servers onto larger systems as a way of cutting hardware and systems management costs he said LaBrucerie said the new model will be "a lot more fair and logical" than the current system for customers that use partitioning. Server consoliamong businesses seeking

ways to cut iT costs, and the new pricing seeks to address that, she said. More Flexibility tohn Bielec CIO at Drevel University in Philadelphia. said the new pricing structure

will likely help the university cut costs as it continues to re place and consolidate servers. The new pricing "will give us flexibility in terms of movine lMicrosoft server applications! from smaller to larger with larger costs" for licensi

he said. Drexel uses two of the affected Microsoft server products, SQL Server 2000 and BizTalk Server 2002, Drexel replaces about one-third of its hardware annually, Biclec said, adding that he expects the savings from the new pricing structure to be reflected in his budget after July 1.

The model eventually will be extended to Microsoft's Windows 2000 server operating system. LaBrunerie said. The company recently acquired technology from Connectix Corp. in hopes of providing software that will let a single Windows server act as a series of separate machines, Microsoft will discuss origine changes for Windows 2000 when that virtualization software is released LaBruneric said.

ply to earlier versions of the eacht Microsoft products affected by the choose, although the company won't offer refunds to customers that have already paid for software they're number on partitioned

The new model will also anare freed up by the new syspaying for eight processor li servers. Those customers will four processors. When the he able to rouse licenses that now model kirky in on April 1

tem Microsoft said For evanuple, under the current model, a user running SOL Server on a partitioned eight-way server is ware mucht be running on only that customer will have four unused SQL Server licenses in hand, LaBrunene said The changes apoly only to customers on per-processor licenses and don't affect the citent/server access beense

News Service, Computerworld's Todd R. Wess contributed to this report.

model Park said &

SAP Bundles R/3. Other Apps in New ERP Release portant elements which have

SAP AG last week said it's rolling out a beefed-up version of its enterprise resource planning (FRP) software simed at users who are daunted by the prospect of buying and installing a full set of the company's applications. Appropried at the Collect

2003 conference in Hanswer. Germany mySAP FRP is the newest release of SAP's flagship R/3 software. The prod uct bundles R/3 with applications that were previously sold separately, including SAP's portal and businessto-business marketplace cofeware

Deborah Schmidt, global vice president of enterprise solutions at SAP, said mySAP ERP users will also get built-in functions from other applications, such as tools for analyzing human resources and financial data. SAP is exploiting the NetWeaver integration technology it announced in January to add functionality to

the FRP software without requiring users to buy licenses for all the pieces of its mySAP suite, Schmidt said. She added that there will be special pricing for mySAP

ERP but didn't disclose details. Tom Ackerman, senior director of business information systems at R/3 user Symbol Technologies Inc. in Holtsville, N.Y., said the plans out lined by SAP should provide increased integration capabilities and more user interface flexibility. Those are "two im-

been missing from traditional ERP offerings," he said. MySAP ERP also includes support for automating back office administrative services. such as management of real estate, travel expenses and

payments of commissions and other incentions said time Sheeberd, an analyst at AMR Research Inc in Boston The new release is available now. SAP also announced a professional services automa tion application designed to

let companies in service industries automate the management of their operations.

SAP rival PeopleSoft Inc decoursed the Collect chow to appounce an interration

move, detailing plans to provide links to instant messaging and collaboration technology from IBM. Microsoft Corp. and Yahoo Inc. in its end-user portal and other applications. Paola I shet vice president of marketing for PeopleSoft's AppConnect integration tools, said Version 8.8 of the company's Enterprise Portal software will also include new carabilities to belo IT managers develon intranet sites for groups of and mean who need to collabo-

rate with one another The portal upgrade will be available this week, although the instant messaging connections aren't due until the fourth quarter, Lubet said.

But all this time, this has been

the way we've run the company

- not by barking orders, but by

Plattner Ends Management Role

SAP test week said Hesse Plattner, its co-CEO and chair man, will give up those jobs and step away from a full-time management role at the com cerry he helped found in 1972. Plattner, who will become head of SAP's supervisory board.

concust-Arrien company spoke with Computerworld

WII SAP's strategic direc on change when Her sole CEO? I don't think on The workers with Henning for 21 years. and we set out the strategy over the last wars together. [7] still play an active role in the form of giving advice.

convincing people to do things. Pretty much we've been a con-What has been your main contribution to SAP? I like to play the creative role and tool the liberty to live creatively and invent things and, with the help of colleagues, bring them into

production and make more Probably rest to that, my best ability is to see narly enough when something is maching its peak and to start thinking about what is the next thing to do.

- Marri Spenie

Ore. Makes Push For Open Source

Frustrated by budget woes and mpatible IT systems among state agencies, an Oregon legis later has introduced a bill that would require the appraises to sider open-source software when making IT purchases. The idea, said Democratic Rec. Phil Barnhart, is to offer cheaper and more flexible actions to government departments. (See related story, page 45.1

IBM to Offer Digital Surveillance Help

Looking to cash in on increased mand for video surveillance and other security-related services, IBM said last week that it will offer services to bein companies deploy digital video surnce and security systems. The new services are designed to help companies make a tran-sition from older, videotapebased surveillance systems to IP-based surveillance networks.

Red Hat to Ship Midlevel Server OS

Red Hat Inc. last week announced a midlevel server op on system in a bid to expand its sales beyond its high-end, en-terprise-focused Advanced Server. The Red Hat Enterprise Linux ES product is designed for less heavy lifting than Advanced Server, which has been re-Red Hat Enterprise Linux AS.

The AS product runs on both 32

and 64-bit centeres Short Takes

INFINISWITCH CORP. and LANE 15 SOFTWARE INC. said they're merging in order to buridle their iniBand products, a network litch and management software for high-performance serv sters. . . . A study from EVANS DATA CORP found that 51% of companies in North nerica laid off software deve ers last year.

MARK HALL • ON THE MARK

Internet 2 Speed Tricks May Hobble SAN ...

... operations in the data center, if you don't take precautions, warns Loki Jorgenson, director of research at jaalaM Technologies Inc., a network consultancy in Vancouver, British Columbia, involved in Internet 2 development. Jorgenson worries that the emergence of large packets (Jumbo Frame or MTU for maximum transmission unit) that have been used to set "land speed records" [QuickLink 35237] on Internet 2 and are available in Gigabit Ethernet are incompatible with the

smaller byte-size packets in your run-ofthe-mill Ethernet. He points out that there's "no lumbo MTU standard for GirE," and vendors can set the packet sizes from 16,000 to 2,600 bytes, whereas 1,500 bytes is the set limit for IOMB and IGGMB Ethernet. According to Jorgenson. if Gieabit Ethernet vendors "don't default to 1,500, the data between devices might fall into black holes." The most likely place for problems to occur be predicts, is inside the data center, especially in a SAN,

which is likely to employ the highersecond network sear. During a restore of data, a SAN will likely need to transmit it to a server with lower-speed Ethernet, Jorgenson sugposts that network admins add MTU sizes to their checklist of must-do tasks when in-

stalling Gigabit Ethernet systems, making certain that the network device with capacity for the smallest packet size is the largest MTU fur your entire network. Although you won't be setting any land speed records, a slower speed is

better than no speed at all. . Tons of EAI tools are poised for spring release. See-Beyond Technology Corp. in Montovia. Calif., on March 31 will ship eGate 5.0 as part of its Integrated Composite Application Network suite. All of the adapters have been rewritten in compliance with the lava Connection Architecture and run on SeeBewond's own I2FF ann server or WebLogic and WebSphere servers. By lune, the company will be adding, among

other parts of the suite, eVision Studio 5.0 for Web and wireless application dove

ers, who set flashy GUI tools to belp them link new apps to business logic and morteflow roles a Comber north in Pleasanton, Calif. Commerce One Inc. next Monday will ship its Composite Process Management Platform, Conductor 6.0. The EAI product ineludes a host of "process accelerators" - templates for a variety of vertical market husiness processes and workflow operations Although Conductor 6.0

will be new its product her-

itage warrants the 6.0 convention, argues Narry Singh, chief marketing officer, As an aside, he says a recent company layoff puts the company back on solid ground "with money in the bank." A far better place to keep it than the CEO's mattress. # If you're one of those brave souls pushing ahead with Web services applications. you'll need a tool to identify, monitor and manage the interdependencies among those services. Or you'll certainly need one when something goes wrong. That's prompting Actional Corp. in Mountain View. Calif., to make available March 28 a slew of new products to keep an eye on proliferatine Web services. Actional's Looking Glass server lets you set policies and receive usage statistics and service alerts through its Active Agents, which run on servers delivering Web services. James Phillips, Actional's senior vice president of marketing, claims that these agents consume only 10 msec of overhead for each transaction. But if you think that's too steep of a performance price to pay, you can use the new 4.0 version of the company's SOAPstation proxy server, which also shins March 28. It can implement the policies you set in Looking Glass and manage Web services traffic from a central server, a Thinking about outsourcing your Oracle database administrator's work? Well, you might have already cor across Newton, Mass-based Ntirety LLC.

Oracle isn't your problem. How about Unix? This week, Ntirety is announcing that it's ready to remotely run Unix systems. And by the end of 2003, claims company founder and CEO Mike Corev. he'll be set to remotely oversee Microsoft SOL Server, "In hindsight," he says, "I'd have started with SOL Server," Why? "They are less sophisticated users, and there's more of them," Advice to Mike: Stay away from Redmond for a while.

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International Data Group. Computerworld Inc's pagent company, last week announced the appointment of Robert P. Carrigan as publisher, president and CEO of Computerworld, Effective April 7. Carrigan will be responsible for all business activities of the print publication, as well as online, events and research Carrigan, 37, is no stranger

At AOL Carrigan to Boston-based IDG, having led the Key Accounts

New CEO to Take Helm at Computerworld held various executive post-Group, which manages Dulles, tions at the company through-Va.-based AOL's largest and out the '90s, including four years as vice president and as-Though his aim is to "create

\$895, or \$1,545 il you

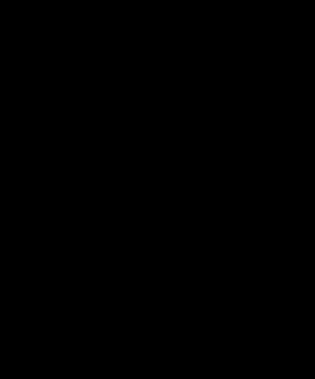
want a GPS add-on

sociate publisher of PC World. new and better ways to deliver His move to Framingham information services to IT Mass,-based Computerworld leaders," Carrigan said, readwill follow four wars ers shouldn't expect spent at America Online Inc., where he is senior vice president of interactive marketwe to listen to the

any drastic changes. What I can tall uses is that we will continreaders," he said. "My sense is that given all of the awards

and the accolades and the reach that has been determined by independent studies. Computerseorld is in fantastic shape from an editorial perspective," he said.

bust last week. Computerworld received the Jesse H. Neal National Business Journalism Award in the "Best News Coverage" eategory for investigative reports last year on security problems associated with wineless LANs [Quick-Link 26374]. Computerworld was also a finalist in the "Best Web Site" and "Best Staff Written Editorial" eategories.



Ore. Makes Push For Open Source

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International Data Group, Computerworld Inc.'s parent company, last week announced the appointment of Robert P. Carrigan as publish er, president and CEO of Computerworld. Effective April 7, Carrigan will be responsible spent at America Onfor all business activities of line Inc., where be is the print publication as well as online, events and research

Carrigan, 37, is no stranger to Boston-based IDG, having

held various executive positions at the company throughout the '90s, including four years as vice president and associate publisher of PC World. His move to Framingha Mass-based Computerworld will follow four years

> senior vice president of interactive markets At AOL Carrieso led the Key Accounts

leaders," Carrigan said, readers shouldn't expect any drastic char What I can tell you is that we will continme to listen to the readers," he said "My sense is that given all of the awards

and the accolades and the reach that has been determined by independent studies. Group, which manages Dulles, Computerworld is in fantastic Va.-based AOL's largest and shape from an editorial perspective," he said Though his aim is to "create Just last week, Computeroew and better ways to deliver

world received the Jesse H. Neal National Business four nalism Award in the "Best News Coverage" category for investigative reports last year on security problems associated with wireless LANs [Quick-Link 263741. Computerworld was also a finalist in the "Best Web Site" and "Best Staff-Written Editorial" categories.



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New IBM iSeries Pricing Won't Benefit All Users

'Sticker shock' could await small and midsize firms

TOTAL USERS OF IBM's ISCries systems will benefit from the new software pricing and upgrade options the company amnounced in January, according to users at the Common trade show beld here last week.

beld here last week.

While the changes generally reduce complexity and increase cost-effectiveness, some small and midsize shops could face unexpected price increases as a result of the

changes, users said.
"Overall, it's a very good effort," said Len R. Eckert, IT director at Jim's Formal Wear
Co. in Trenton, III. "But there are some customers who will

get hurt from it."
"It's fine for what we are doing, but I'm not sure it will work for everybody," added Michael Watson, e-commerce manager at Carhatt Inc., a clothing manufacturer in

Dearborn, Mich.

Im Jarman, an IBM pricing
enceutive, last week acknowledged that some users could
see price increases in moving
to the new models. But he said
the changes were made in response to long-standing demands by users for less-com-

plex license structures. Impact Varies

The impact of the changes will vary depending on "where you were buying in the previous pricing range and where you will be buying in the new range." Jarman said. But for most users, he said, the move should be a positive one.

should he a positive one.

IBM in January announced a major pricing change along with several new iSeries hardware models — previously

known as AS/400 systems featuring a wide range of integrated middleware products (QuickLink 3571?). Users that upgrade their systems to the new models will have the option of choosing either a Standard Edition or an Enterprise Edition soft-

systems to the new modes will have the option of choosing either a Standard Edition or an Enterprise. Edition software package. The Standard Edition offers a bundled database, an on/off capacity-on-demand feature and partitioning capabilities. But users won't have the ability to run green-creen applications — or interactive workhoods — or interactive workhoods — or interactive workhoods.

their Series systems.

Enterprise Edition users pay
a higher upfront fee for a
wider set of middleware products and the ability to use the
entire capacity of their iSeries
systems to run interactive

workloads.
According to Jarman, the new pricing structure allows New License Model

Physides users one price for un restricted green-screen use.
Gives users one software fier.
Others on/off capacity-pri-

demand features.

most users to get far more

most users to get at mere green-screen processing power for substantially less money than they would have paid under the previous license model. It also eliminates the performance caps and complexity associated with the previous multilitied princing structure. But some users, particularly those with smaller workloads, will find little benefit, users said. Because of the way the prije-

ing is structured now, a com-

pany with a relatively small

100-commercial-processorworkload interactive requirement, for instance, could be forced to sign up for the enter-

prise package on a higher-end box, even if the unlimited green-screen ability that comes with it isn't needed, Eckert said.

"It would be overkill for thern" he said.

"State of Flux" Only a "small subset of ac-

counts' are likely to need the unrestricted green-screen use promised by the new prixing structure, and Jeffrey Corey, a regional sales manager at Computer Configuration Services, an IBM business partner in Indianapolis. Others are still in a "state of flust" over whether to go with the Standard Edition and Web-enable their green-screen applications, or to choose the Enterprise Edition when upgrading, he said.

"Tve seen looks of sticker shock" over the price difference between the two pricing models. Corey said. In one test configuration for a customer, the difference between an enterprise software package and a standard one on the same piece of hardware was

\$102,000, he said.
Users who have airready separately purchased much of the software that IBM is now bundling with the higher-end hardware models are likely to see less benefit as well, said Eric Songy, director of IS at Standard Companies Inc. in

New Orleans.

As a result, they should get some credit for those investments, he said. Otherwise, "you are paying for a bundle without getting credit for what you have already paid for."

While acknowledging such issue, jarman maintained that

you have already paid for."
While acknowledging such issues, Jarman maintained that those users will still get additional benefits from some of the new performance tonls and software that IBM is bundling with the new iSeries.

handware B

HP Rolls Out Usage Metering Product

BY JAIKUMAR VIJAYAM
A new automated metering

technology amounced by Hewlett-Packard Co. last week builds on the company's efforts to give users the ability to pay for hardware based on actual measured usage. But companies will need to buy at least four of HP's highend Superdome servers and commit to using at legat 25%

of the overall capacity on each to be eligible for the new metering product.

The metering capability will let users more closely align their hardware costs with actual system utilization, said Irv

their hardware costs with actual system utilization, said Irv Rothman, CEO of HP's financial services organization, which will deliver the technolocy to users.

It will allow users to keep extra capacity available at hand but pay for the capacity only when it is actually used. "It enables customers to lower their total cost of ownership and enhance their re-

tower trains total cost of ownership and enhance their return on IT." Rothman claimed. The metering system expands upon technology that HP has offered since the rollout of its first Superdome servers in late 2000. Earlier HP pay-per-use metering products kept track only of whether a CPU was on or off

and provided a monthly usage average on that basis. The latest version sits behind a company's firewall and determines how much of a CPU's power is being used every fire minutes. A monthly average is calculated, and customers are billed based on average percentage of CPU power used.

er used.

All of the CPU utilization data is automatically collected, encrypted and transmitted to an HP billing engine without any user intervention or administrative overhead, according to Rothman.

Astronatically captures GPU reflection rates. The rentering laredware and subtreme of reside a firewall and read GPU usage. The captured enforcement in the remarks of the rentering system.

It evaluates mage based pricing.

R norables snage-based pricing. Users who buy at least four new Superdone servers and covered to using at least 25% of the overall caysority ne each system. "If a user operates at maximum, this pay-per-use percentage utilization offering is no more expensive than a standard 36-month contract."

standard 30-month contract," Rothman said.

BMO Nesbitt Burns Inc., a financial services firm in Toronto, has signed up for the new model, according to Rothman. The company will save \$3.3 million over three years compared with what it was paying under previous bardpaying under previous bard-

ware leases, Rothman said.
Officials at Nesbitt Burns
were unavailable for comment
by press time.
Users must be careful
when signing up for such
models and But Clean pression.

when signing up for such models, said Pat Cicela, president of Cicela & Associates LLC, a contract management consultancy in Hoboken, N.J. But companies that are well organized and know how

well organized and know hos to manage the peaks and valleys in demand can benefit from a pay-per-use model, Circula said &



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Cattott know how"

Brokerages Face Big IT Bills to Comply With USA Patriot Act

Report puts total tab at \$700M; many firms said not to have even started

REPORT released last week estimates that the U.S. brokerage industry will spend as much as \$700 million through 2005 on technology and outsourcing services in order to comply with the antiterrorism and anti-moneylaundering regulations of the USA Patriot Act.

The report by Needham. Mass-based TowerGroup says brokerages spent \$117 million on Patriot Act compliance measures last year and will invest about \$404 million this year, when most of the Patriot Act's provisions become law. The report also indicates that some large brokerages expect to spend up to \$30 million each. But after that, budgeting for compliance initiatives drops off sharply.

I don't want to say they're not taking it seriously, but of 5,500 registered [securities] dealers in the country. I'd estimate that 1,000 or less are actively building or buying solutions," said Bob lati, a research

director at TowerGroup. The Patriot Act, which was signed by President Bush in October 2001 in response to the Sept. II terrorist attacks, requires financial services companies to develop improved capabilities to identify customers and flag suspicious

Where the Money Goes According to TowerGroup shout 39% of compliance budgets is being spent on integrating back-end systems, and 35% is going toward new software Another 24% of the money is being used to upgrade IT in-

frastructures, such as hardware and storage, the report says. The remaining 2% is paying for outsourcing services

with operators of customer databases, such as Regulatory DataCorp International LLC (RDC) in New York. RDC was launched in fuly by The Goldman Sachs Group Inc. and other firms to devel-

op a database for screening suspected criminals, Companies use a secure Web portal to send individual names or lists of customers to RDC. which then runs the names through an Oracle database installed on Unix servers. Bill Catucci, CFO and presi-

ny has about 25 clients in addition to its 20 original investors, who included Merrill Lynch & Co. and Citieroun Inc. But he noted that the stinulations of the Patriot Act are

*When [federal regulators] say you should have a compliance system that meets due diligence, you don't know what that means," Catucci said. "The issue is that if you don't meet the requirements. they'll sanction you." Regulators are first checking to make sure that companies have established the required anti-money-laundering

compared with a price of \$8.61

per gigabyte for an ATA-con-

figured model, said the Hop-

kinton, Mass.-based company

in PCs, but ATA-based disk ar-

rays are an emerging technol-

ogy for near-line information

archiving and storage of fixed

based array called Centers for

data, and vendors such as Net

work Appliance Inc. and Stor-age Technology Corp. also of-

New From FMC

data, such as check images

EMC aiready sells an ATA-

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ATA drives are mainly used

and then they're examining the actual compliance proce-dures, said Broffni McGuire, a TowerGroup analyst. "And after that, they're looking to see if you have the technology in place and are using it effectivels," McGuire said.

Eric Friedberg is a form federal regulator who is now executive vice president and eneral counsel at Strog Fried berg LLC, an IT services and consulting firm in New York. Friedberg said that although most large banks and brokerages are on their way to Patriot Act compliance, many smaller companies don't in-

tend to get there because they don't think it's worth the cost. "I think the biggest roadblock is budgetary," he said. "The technologies exist to meet whatever high standard of due diligence the government requires. It's just that there has to be commitment by the organization to do it "A

fer arrays with ATA drives. Jerome Wendt, a senior information systems analyst in storage administration at ouvments processor First Data Corp. in Omaha, said EMC's entry into the near-line stor-

age arena is piquine his interest in ATA drive technology. "As I'm starting to look to stage storage in order to move it off to tape, having a name brand vendor like EMC supporting this [technology] with their services definitely makes a difference," Wendt said. But be added that he's still not ready to move to an ATA.

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EMC's Clout Mike Peterson, an analyst at Strategic Research Corp. in Santo Barbara, Calif., said EMC's offering isn't a technical breakthrough. But EMC's cloud could belp sour a movement away from tape archiving by users who want to keep their data online, said Peterson. who's also executive direct of the Enhanced Backup Solu-

tions Initiative, a trade group based in Carpinteria, Calif. The concept here is you will be storing information, and lots of copies of it in multiple locations," he said, "But

you have to automate the data protection process, and you can't do that with tape." Because the Clariion arrays support both Fibre Channel and ATA, users can build bybrid storage servers that mir ror or send snapshot copies of data between the two types of disk drives, said Chuck Hollie vice president of platforms

marketing at EMC EMC is using 250GB parallel ATA drives that run at 5,400 rpm, compared with top spin dle speeds of up to 15,000 rpm on the Fibre Channel drives it offers with the Clarison arrays The Fibre Channel drives top out at a capacity of 146GB, but they support nearly twice the L/O performance that the ATA devices provide, according to technical specifications.
The I/O differences leave Fibre Channel as the disk technology of choice for trun action processing and other

high-performance applications that are run through the Clariton arrays, EMC said, But for longer-term storage, the ATA drives can back up data about 33% faster than tame archival systems, and they can restore that data five times faster than tape libraries can the company added 9

EMC Mixes Disk Drives On Its Midrange Arrays

Bridging lets Clariion users add less-expensive ATA disk drives

EMC Corp. last week an-

nounced a bridging technology that lets its newest midranee storage arrays use lower-cost disk drives. The move is aimed at allowing IT manacces to switch from tunebased data archiving to long-

term disk storage. EMC said its Clariton CX400 and CX600 arrays. which are resold by Dell Com-

puter Corp., can be retrofitted with advanced technology attachment (ATA) disk drives alongside or in place of the Fibre Channel drives now used. Arrays with ATA drives for socalled near-line storage will be priced up to 50% below the cost of an all-Fibre Channel configuration, said EMC.

For example, a CX400 array with a 3.7TB storage capacity would cost \$19.83 per gigabyte

3Com Launches Devices for Sending Power via Networks

New switch and IP phone supports draft Ethernet interoperability standard

3Com Corp. last week anced a switch that provides electrical power over Ethernet wiring and interoperates with new IP telephones and wireless LAN access devices, freeing users of those ducts from the need to

have separate power cables. Networking devices that support Power Over Ethernet technology began appearing two years ago and are already being offered by 3Com, Usco Systems Inc. and other vendors. But all the new 3Com products adhere to a draft interoperability standard called IEEE 802.3af, said Doug Hyde, a product manager at the San-ta Clara, Calif.-based vendor.

Nick Lippis, an analyst at Lippis Consulting in Hingham, Mass., said 3Com's new switch. and its companion devices are the first products to become available that adhere to the proposed 802 3af standard The chief benefit of Power Over Ethernet is that it elimi-

nates the need to connect IP telephones and WLAN access ts to power outlets, Lippis said. Companies that use th technology don't need to run power lines to the devices, resulting in fewer wires nunning over or under desks, he added.

3Com said its 24-port Power Over Ethernet switch, called the SuperStack 3 Switch 4400 PWR. forwards electrical power at low wattages to connected devices. The company plans to add new Power Over

Ethernet phones in May and is already shipping a converter module that will let its existing IP telephones work with the new switch instead of requiring power adapters.

Nothing to Unpiug

Three new WLAN access devices can also be connected to the switch to get power so er cables and outlets aren't

they can be placed on ceilings or other locations where powreadily available, Hyde said. Ventura Unified School District in Ventura, Calif., earlier this month began beta-testing the 4400 PWR switch to provide power to some of the

1,200 3Com NBX IP phones it has installed at 22 sites. Ted Malos, the district's di-

rector of technology, said Ethernet power is a "must-have" for the schools. If there's no need to use the power outlets in classrooms, there's no possibility that students will un-

TECHNOLOGY DETAILS 3Com's Power Over **Ethernet Devices** SuperStack 3 Switch 4400 PWR: Includes 24 ports; due to

ship in April for \$2,495

MBX phones: Enhanced IP tele-phones with 802.3el support, due in May for \$500 to \$700 Converter module: Lets older NBX phones work with the new switch; available now for \$30

plug the phones, he noted. Majos said the school district plans to standardize its future switch purchases on the new 3Com devices, which will also be used to power a new wireless network that's

due to he phased in this year. "The switch gives us incentive to go to wireless," be said Ethernet switching is a huge market, valued at \$10.8 billion

worldwide last year, accord to Dell'Oro Group Inc. in Red wood City, Calif. But Power Over Ethernet sales are "still very small" and have yet to even be measured, said tulie Learmond-Criqui, a spokeswoman for Dell'Oro.

Gartner Survey Finds Continued CIO Focus on Cutting Costs

But IT execs are also trying to aid innovation efforts

Cost-cutting continues to be the too business issue facing ClOs. But IT leaders are also focusing on ensuring higher levels of information security improving risk-management procedures and helping to foster more rapid business inno

vation, according to the results of a Gartner Inc. survey that's being released today. Meanwhile, ClOs' top IT management priorities this year include providing better technology guidance to senior executives and demonstrating IT's business value (see box). Those findings also come

from the Gartner survey. which was conducted online during last year's fourth quarter and drew responses from 620 CIOs and other IT executives worldwide. The continued focus on re-

ducing internal costs maps with what Bob Alsaker is seeing in his job as information Fence Co., a Phoenix-based fence construction and rental firm. "We spent 2002 shoring no our infrastructure and reducing expenses wherever hu-manly possible," Alsaker said. But Gartner said its survey, which was conducted by the consulting firm's Gartner Executive Programs unit, also reflected an increased focus on innovative uses of IT Ellen Kitzis, group vice president of Gartner Executive Programs, said many CIOs have started looking "at the future of business as opposed to sustainability, stability and low cost."

On the other hand, Gartner said the survey results indicate that the long-standing goal among CIOs of creating a single view of their companies' customers is losing some steam. That is primarily the result of the emphasis on cutting costs and the disappointing results some users have experienced with custom

company is still primarily a

brick-and-mortar business, se-

"shun any type of Web-based

initiatives," he added.

One of the silver lin

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agement tends to

relationship management about innovation" if they're worried about being on the projects, according to Gartner Alsaker said there "has been iob for only 18 months. Michael Brenner, head of a slight increase in customerfocused initiatives" at American Fence. But because the

executive search firm Brenner Executive Resources Inc. in New York, attributed the rise in tenure partly to a desire to maintain corporate stability during the current poor market conditions. The increase could give CIOs the chance to have a more sustainable impact on companies, he added.



about 18 months at the time of Gartner's 2000 survey to nearly three years, said Kitzis. She added that CIOs "can't think

Brokerages Face Big IT Bills to Comply With USA Patriot Act

Report puts total tab at \$700M; many firms said not to have even started

REPORT released last week estimates that the U.S. brokerage industry will spend as much as \$700 million. through 2005 on technology and outsourcing services in order to comply with the antiterrorism and anti-money laundering regulations of the

USA Patriot Act The report by Needham, Mass,-based TowerGroup says brokettees sport \$117 million on Patriot Act compliance invest about \$404 million this year, when most of the Patriot The report also indicates that some large brokerages expect to spend up to \$30 million each. But after that, budgeting for compliance initiatives

drops off sharply. "I don't want to say they're not taking it seriously, but of 5.500 registered [securities] dealers in the country. I'd estimate that 1,000 or less are avtively hudding or buying solutions," said Bob lati, a research

director at TowerGroup The Patriot Act, which was signed by President Bush in October 2001 in response to the Sept. II terrorist attacks. requires figuretal services companies to develop improved capabilities to identify customers and flag suspicious

Where the Money Goes

According to TowerGroup. about 39% of compliance budgets is being spent on integrating back-end systems, and 35% is going toward new software Another 24% of the money is being used to upgrade IT infrastructures, such as hardware and storage, the report says. The remaining 2% is pay ing for outsourcing services

with operators of customer databases, such as Regulators DataCorp International LLC (RDC) in New York

RDC was launched in July by The Goldman Sachs Group Inc. and other firms to develop a database for screening messuse a secure Web portal to send individual names or lists of customers to RDC. which then rute the names through an Oracle database in-

Bdl Catucci, CEO and presi

stalled on Unix servers.

ny has about 25 clients in addition to its 20 original investors, who included Morrill Lynch & Co. and Citumore Inc. But he noted that the stre ulations of the Patriot Act are

fuzzy at best When I federal regulators! say you should have a compliance system that meets due diligence, you don't know what that means," Catucci said. "The issue is that if you don't meet the requirements.

they'll sanction you." Regulators are first checking to make sure that compames have established the required anti-money-laundering

and then they're examining the actual compliance procedures, said Breffni McGuire, a TowerGroup analyst, "And after that, they're looking to see if you have the technology in place and are using it effec-

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EMC Mixes Disk Drives On Its Midrange Arrays

with Fibre Channel driver Bridging lets Clariion users add less-expensive ATA disk drives

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compared with a price of \$8.61 per engabyte for an ATA-configured model, said the Hopkinton, Mass-based company ATA drives are mainly used in PCs, but ATA-based disk arrays are an emerging technolony for near-line information

archiving and storage of fixed data, such as check images. EMC already sells an ATAbased array called Centera for long-term storage of fixed data, and vendors such as Network Appliance Inc. and Storage Technology Corp. also of-

New From EMC



fer arrays with ATA drives. Jerome Wendt, a senior information systems analyst in storage administration at navments processor First Data Corp. in Omaha, said EMC's entry into the near-line storage arena is piquing his interest in ATA drive technology.

"As I'm starting to look to stage storage in order to move it off to tape, having a namehrand vendor like EMC supporting this [technology] with their services definitely makes a difference," Wendt wild, But he added that he's still not ready to move to an ATAequipped Clarison.

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Strategic Research Corp. in Santa Barbara, Calif., said EMC's offering isn't a technical breakthrough. But EMC's clout could help spur a movement away from tape archiving by users who want to keep their data online, said Peterson, who's also appearing disease. of the Enhanced Backup Solutions Initiative, a trade group based in Carpinteria, Calif.

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Fibre Channel as the disk technology of choice for transaction processing and other high-performance applications that are run through the Clariion arrays, EMC said. But for longer-term storage, the ATA drives can back up data about 33% faster than tape archival systems, and they can restore that data five times faster than tape libraries can.

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Compuware Tools to Support ATM

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NEX phones work with the new switch available now for \$30 and priced from \$749 to \$1,099

TECHNOLOGY OFTAILS 3Com's Power Over Ethernet Devices SuperStack 3 Switch 4400 PWR-Includes 24 parts due to

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Ethernet switching is a bues market valued at \$10.8 billion worldwide last year, according to Dell'Oro Group Inc. in Red wood City, Calif. But Power Over Ethernet sales are "still very small" and have yet to even be measured, said Julie Learmond-Criqui, a spokeswoman for Dell'Oro

Gartner Survey Finds Continued CIO Focus on Cutting Costs

But IT execs are also trying to aid innovation efforts

BY THOMAS HOFFMAN Cost-cutting continues to be the top business issue facing CIOs But IT leaders are also focusing on ensuring higher levels of information security. improving risk-management procedures and helping to foster more rapid business innovation, according to the re-

sults of a Gortner Inc. survey that's being released today Meanwhile, CIOs' top IT management priorities this year include providing better technology guidance to senior executives and demonstrating PCs business value (see how) Those findings also come

from the Gartner survey. which was conducted online during last year's fourth quar ter and drew responses from 620 CIOs and other IT executives worldwide.

The continued focus on reducing internal costs maps with what Bob Alsaker is secing in his job as information systems director at American Fence Co., a Phoenix-based fence construction and rental firm. "We spent 2002 shoring up our infrastructure and remanly possible." Alsaker said. But Gartner said its survey, which was combacted by the consulting firm's Gartner Executive Programs unit, also reflected an increased focus on Kitzis, group vice president of Gartner Executive Programs, looking "at the future of busi-

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ing results some users have experienced with customer relationship management projects, according to Gartner Alsaker said there 'has been a slight increase in customerfocused initiatives" at American Fence. But because the company is still primarily a

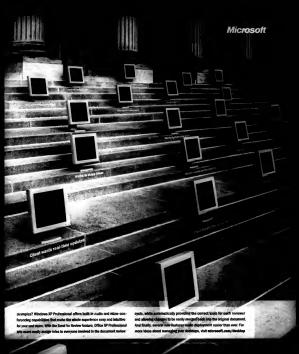
nior management tends to shun any type of Web-based initiatives," he added. One of the silver linings that of the survey revealed: The tenure of CIOs has risen from

Priorities for CIOs

about IS months at the time of Garmer's 2000 survey to nearly three years, said Kitzis, She added that CIOs "can't think about innovation" if they'reworried about being on the job for only 18 months Michael Brenner, head of

executive search firm Brenner Executive Resources Inc. in New York, attributed the rise in tenure partly to a desire to maintain corporate stability during the current poor market conditions. The increase could give CIOs the chance to baye a more sustainable im pact on companies, he added.





BRIEFS

Messenger Adds Camera, Action

Microsoft Corp. has added web fionality to its MSN ssenger 5.0 client, allowing users to stream and view live rideo via instant messages. The webcam features are being provided under an agreement Micro-soft signed with Swiss firm Logitech International SA, which is providing the add-in applica-

tion and maintaining the connec-Oracle Upgrades Warehouse Builder

Oracle Corn. last week releas Version 9.0.4 of its OracleSt use Builder, Enly ments include a new SAP Inte grator that makes it easier to tract information from SAP AS R/3 systems, better work flow leatures and support for stry standards to simpl ocess of integrating Ware suse Suilder with third-party facts. Pricing is \$5,000 per ed User Plus as part of the

Cisco Aggregates SAN, LAN Traffic

Cisco Systems Inc. last week announced enhancements to its ONS 15530 Multiservice Aggreon Platform, with the aim ing storage area network (SAH) traffic with services th as Gloabit Ethernet over a de fiber-cotic link union decon

Short Takes IBM and BELLSOUTH CORP. will

letly offer hosting and network services to firms in the southon U.S., particularly small ion retailer SEMETTON DROUP SPA plans to attach radio age to its Sieley clothing line to

Outdated Technology Hampers National Amber Alert System The bills before Congress

digital assistants or any

other communication device.

There are no standards for

developing a ubiquatous warn-

ing system, nor is there much

interest in Congress at this

in October proposed \$10 mil-

money will go to electronic

bighway signs and training.

The EAS sys-tem doesn't

reach enough peo-

ple, particularly

talking about life-

threatening issues.

border are daunting," Mocny

acknowledged, "Especially

when you talk about the 90

largest land ports of entry

There are environmental

laws (and other restrictions)

that apply to the growth of

Morny said \$245 million

infrastructure improvemen

and a portion of the \$362 mil-

lion provided for the entry/

given to the department for IT

when you are

not to new technologies.

Pending bills don't include funding for revamp of network BY PATRICK THIB ODEAU

THE RESCUE last week of Elizabeth Smart. the Utah teenager who was kidnapped nine months ago, has brought renewed calls for a national Amber Alert system to help find missing children. But if Congress approves the plan, it will be implementing the system on top of a technology

that isn't fail-safe or as effective as it could be say critics The technology underlying the Amber Alert system is the Emergency Alert System (EAS), the direct descendant of the Emergency Broadcast System begun during the Cold War and known by its "This is only a test" warning message.

Continued from page I

Border Security

"That takes now customs now infrastructure that are not

The need for a reliable and efficient system at the borders has been "made more urwent by the prospects of the United States going to war with Iraq and the possibility that Saddam Hussein might try to use weapons of mass destruction in America," said Stephen Flynn, a senior fellow in national security studies at the

Council on Foreign Relations in New York. The Department of Homeland Security's frontline troops at the borders and ports "are woefully understaffed, working with obsolete technologies, [have] inadequate support for training (and) are simply not up to the

challenge," Flynn said. Under law, the Department

require Amber Alert to be adopted nationwide don't include funding for revamping the EAS. Amber Alert currently operates in 39 states, and some of them are still using a communications system that relies on radio relays between radio and television stations to disseminate emergency

information "The EAS system doesn't reach enough people, particularly when you are talking about life-threatening issues like a terrorist attack or drifting gas leak," said Peter Ward. chairman of the Partnership for Public Warning, a McLean. Va.-based group formed last year that includes emergency

preparedness experts Ward said there's a need to develop new systems for reaching the public that can

PETER WARD, CHARMAN CARTINE PENIE COO DIES AT WARMAN cell phones, pagers, personal of Homeland Security has until the end of 2005 to complete the deployment of an integrated entro/exit system that

metric technologies to identify foreign visitors to the U.S. and reduce the possibility of terrorists using forced documents to cross the borders So far, more than 6 million biometric border-crossing cards have been issued. And recent pilot programs using the cards on the Canadian border have uncovered more than 250 impostors, Hntchinson said. Additional biometric card readers are scheduled to

makes maximum use of his-

be deployed by the end of the year, be said But the IT infrastructure challenges are formidable.

exit system will go toward bio-"Biometrics will be part of metric infrastructure support. The U.S. Entry/Exit System Timeline

The problem with transmitting emergency messages over the existing EAS is that "any one station along the way could have tripped it up if they didn't hear it, or messed up if their equipment was down," said Dale Gehman vice president of technology at the Pennsylvania Association of Broadcasters in Harris-

burg, "It was old-fashioned,

Cold War era I technology l.... point, he said, President Bush Even though it was EAS, it was lion to beef up the Amber Alert still a daisy chain." program, and pending bills in-Two weeks ago, however chule funding. But most of the Pennsylvania officials tested the first phase of a new satellite communications system intended to link state emergency officials directly with broadcasters. This system has made a remarkable difference. said Gehman. Forty-four key stations responsible for relayine messages now have the

> satellite capability; in two years, about 320 broadcasters will have it. Gehman said. The Amber Alert system was created in 1996 following the kidnapping and murder of 9-year-old Amber Hagerman in Arlington, Texas.

the entry/exit program, [but] But that may not come close we currently don't have the into paying for a complete sysfrastructure in place to accomtem, said Nancy Kingsbury, an modate that," said Robert analyst at the General Ac-Morney dissertes of the correccounting Office the impetion. exit program at the U.S. Butive arm of Congress. In addiresu of Immigration and Custion to card readers, the infratome Enforcement structure would include com "The challenges for the land

nuters and communications enhancements to handle more electronic processing "There are issues of scalability that will require considerable testing and development to bring the system to the point where hundreds of millions of identity checks an-

qually are feasible, accurate and efficient," said Kingsbury. There are also questions surrounding the technical and operational effectiveness of hiometric technologies in projects as large as border

control, she said "The costs and benefits of the system need to be assessed," Kingsbury said. "Suffice to say, we're talking billions of dollars just to implement biometrics."

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CA to Push Automated Fraud Detection

Looking to capitalize on the need for financial companies to eliminate money laundering and fraud. Computer Associates International Inc. is rolling out a new management

application. The Islandia, N.Y.-based software company last week announced CleverPath for Global Compliance, which is targeted at the finance, bank ing and insurance industries The package integrates several existing products to offer a greater degree of automation, including the CleverPath Aion business-rules engine and predictive analysis and portal applications, said Tina Wang, a CA vice president and product

manager for CleverPath. The global compliance at plication will require customization to match the specific needs of a given industry. CA has partnered with integrator BearingPoint Inc. in McLean, Va., to offer cussization services to con nies that don't have the personnel to tailor the software to meet their needs. The software automates

manual processes required by regulatory agencies and can help companies handle fre-quently changing reporting reirements, said CA.

The application can auto matically detect fraud or other illegal activities based on built-in business rules and predictive analysis. Suspected fraud cases are identified and passed on to the appropriate personnel for action - poten-

tially belping companies avoid fines, CA officials said. Customized Interfaces

A customized portal interface will present relevant data and business-intelligence tools to ensure regulatory comat companies, said CA. The application can also be used in the sales, marketing and customer service fields.

The customization services will clearly be processary to make the new offering work, said Ioshua Greenboum, an

Calif. Fraud detection is a

tions Consulting in Daly City, practice in another, he said broad field, and what may be

dustry could be a questionable Greenbaum also noted that

companies that have to comply with legislation such as the Sarbanes-Oxley Act may lack the internal processes and personnel to do so. That act criminalizes the destruction of documents that might be needed

for federal investigations Available now, CleverPath for Global Compliance runs

on Windows, Linux, Sun Solaris, HP-UX and IBM's AIX and z/OS. Pricing starts at \$75,000. 0

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name, so journel the Tipp Let SourClabe 2300 RT201 place receponers all the prototor par male most of our aphysiologich inter prac-

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THIS IS THE POWER OF THE NETWORK. NOW.

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As executive vice president of Hewlett-Packard Co.'s Enterprice Systems Group, Peter Blackmore is responsible for on \$11.4 billion business, Blackmore spoke with Computerworld last week about how HP has fared since its merger with Compas Computer Corp.

Why is HP so builtish on Itar when the rest of the industry

last war

seems to be taking more of a wait-and-see attitude? Both premerger companies came to the same decision. Both had RISC architecture, and prior to the merger, both had decided to adopt Itanium. The logic was the same in both cases in that we wish to be in the computer business, not the chip business. We saw the advantage of using industry-standard chip sets and industry-standard building blocks with more of

our R&D, then going into the value-add beyond that. The clustering, the partitioning, the software and the management tool sets are what offer genuine differentiation. Come September or October, when we launch a complete Itanium product, there will be a paradism

shift. It will be a disruptive technology At a time when other co are ramping up their midd

HP Enterprise Exec Discusses Postmerger Strategy the middleware business? Where

we are investing the money is on management software and virtualization. Middleware is only part of that. What we've decided to do is have a very strong management software architecture.

So we have OpenView as the core of the management software. Above that, we have leadership concents such as Utility Data Center, which is absolutely world class

and is 18 months ahead of IBM and way ahead of amything Sun has to offer. It enables virtualization and dynamic reconfiguration of all the systems in a data center or across multiple data centers. It

proach to managing the infrastructure.

> What role do you see Linux playing in the enterprise? We see Linux as being absolutely strategic. We see growth in all of the three standards -Windows Linux and HP-UX [which is] a standard by default because it has got 32% of the Unix market.

We actually have a \$2 billion Linux business. We have the highest market share of any of the vendors in Linux on server platforms. It is 30%. We have a big service practice around Linux: Around 5,000 of our services people are trained on supporting Linux.

Where does OpenVMS fit in the overall scheme of things at HP these days? It is already well on its way to being ported to IA-64. We will continue to

support it oo IA-64. It is a very special class of operating system. We are not planning to do anything else other than to continue supporting this envimonmont as well as the 450,000 users amond the

world that are on this it and make it run very well on Itanium. The same [is true] with the Non-Stop environment it correctly none on the MIPS chip. It will be migrated to IA-64 as well.

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Why?



MARYERAN IOHNSON

Spamming Tsunami

TORY IDEA! Survey shows most needed appliance is refrigerator," chirped the subject line of one of my e-mail messages last week. It was one of the many hundreds of idiotic

e-mails that clutter my inbox every week. Silly and unsolicited, but hardly real seam.

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The genuine garbage arrives in messages like this one: "Attention my friend, compliments of the season!" says a Mr. Abaku Kwame, who generously offers me a share in the millions of stoden funds from some country's royal family coffers.

try's copal family coffers. Both of these messages slid right through Computerworld's spon filtering service, which we cause source to Postini. I probably get one lepitimate e- mail out of every dozen messages at this point, despite filtering efforts. To be fair. Postini dose cach some 20,000 messages a week in its spon filters—a whoepping flow of all the e-mail Computerworld refor the computerworld reby posts us on the fat coding edge of the spanning transami, which is cetimated to be 50° of all compouters.

e-mail today. We can all recite the litany of complaints about unwelvome e-mail. It drains user productivity, wastes time on e-mail triago, overloads e-mail systems and servers, and drives up storage costs. It also gives the HR department hearthurn, since sexually explicit e-mails could lead to hostific-workplace bussuiss.

tile-workplace lawsuits.

But because there are so many
other things to worry about in the
world, I usually shrug off spam as the
price we pay for the convenience of
e-mail. It's the killer app with the
killer annoyance, tagging alongside
like an evil twin.

Yet the trend lines on spam as a corporate IT problem are rapidly heading in the wrong direction: up. This year, spam is expected to cost U.S. businesses more than \$10 billion in lost productivity and additional bandwidth, according to Ferris Research. And as wireless e-mail continues to catch on, the toll spam takes will spiral even higher.

"Bandwidth is virtually free on the Internet, but it's not free in wireless," points out Danny Shader, CEO of Good Technology, a mobile computing "That spam is costing real

vendor. "That spam is costing real money, and somebody's going to be able to use that economic loss to seriously nail one of the spammers." Enter the legislators and the lawyers. As we reported last week ["States Rusb to Pass Laws to Fight Form" ("Dicklet lide Ase741, all follows)

lawyers. As we reported last week. ["States Rusb to Pass Laws to Fight Spam," Quicklink 36874, all 50 states could have antispam laws on the books by the end of this year. Half of them already do. But these new laws, while gratifying to the legions of spam-haters, are largely useless for actually stopping the stuff.

For corporate IT, there are some hopeful developments on the horizon, but few products that scale to data center heights.

Both Microsoft and America On.

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Engineering Task Force standards
body, which this week in San Francisco will be investigating prevention strategies in its newly created

antispam research group.

In the meantime, industrialstrength antispam software for enterprises in notably lacking, says Internet pioneer Eric Haln, now a
partner in Inventoures Group, an investment firm for technology startups. "There are interesting this pating done for consumers and ISPs, but
in the corporate market, the number
of offerings are few and far between." Be contends. "The vendor

community is just now responding. With the high tide of spam continuing to surge, the first vendor that delivers a truly effective spam blocker for the data center will save many a drowning CIO while making a bootload of money to boot. 1 PIMM FOX

Middleware With a Twist

A STHE NEED to access information grows, the importance of reaching the brass ring of integration throughout the organization rises. That's why you're poing to hear more and more about the move away from a single database or dataway from a single dataway f

middleware. But with a twist.

It's called federated development, and it's defined as the ability to have an integrated view of all pertinent information without keeping the data in one central location. Getting that fed-

one central location. Getting that fed erated view isn't going to be easy. Rather than writing code, this new federated method relies on gluing code together using open standards that are defined for

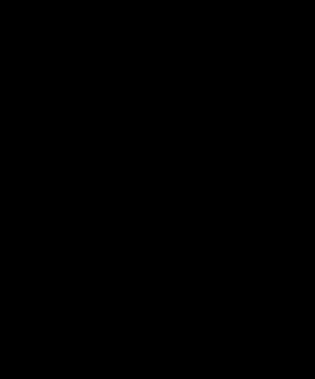
that are defined for different platforms. This approach requires an information integrator like a software plugin—that can learn the best way to answer a query and that can be reused. In essence, these in-

that can be reused. In essence, these integrators build a virtual database. It certainly makes

It certainly makes sense, given the myriad platforms that organizations have deployed and the various geographical locations IT operations have come to support. But how practical is this sort of integration effort, given the ongoing need for service, maintenance and enhancements! At the Indiana University School of Medicine, for example, about 100GB of biomedical information is produced every day - and it peeds to be available at multiple sites in various forms. depending on the systems users have access to. Corporate CRM solutions present similar data management chalenecs, with call center support, customer transactions, e-mails, scanned documents and real-time information all needing to be woven together. How can a federated approach, which builds its virtual database over time.



The scope of these problems may



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Both of these messages slid right through Computerworld's spam filtering service, which we outsource to Postini. I probably get one legitimate e-mail out of every dozen messages at this point, despite filtering efforts. To be fair, Postini does catch some 20,000 messages a week in its spam filters - a whopping 45% of all the e-mail Computerworld receives. That percentage unfortunate ly puts us on the far leading edge of the spamming tsunami, which is estimated to be 30% of all composite

We can all recite the litary of complaints about unwelcome e-mail. It drains user productivity, wastes time on e-mail triage, overloads e-mail systems and servers, and drives up storage costs. It also gives the HR department heartburn, since sexually explicit e-mails could lead to hostile-workplace lawsuits

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Both Microsoft and America Online are openly at war with spam mers, with AOL reporting last week that its new antispam feature is blocking as many as I billion e-mails per day. Serious attention is also being paid to the problem by the influeotial (albeit slow-moving) Internet **Engineering Task Force standards** body, which this week in San Francisco will be investigating prevention strategies in its newly created

antispam research group. In the meantime, industrial strength antispam software for en terprises is notably lacking, says Internet pioneer Eric Hahn, now a partner in Inventures Group, an in-

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With a Twist

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PIMM FOX Middleware

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The scope of these problems may

assist in these cases?



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 comprehensive support for more than
 30 platforms
 - 75 facilities in 10 countries with more than 15,000 end-user positions worldwide



eem to overwhelm the advent of data federation, just as it did for the promise of middleware without the twist But it may be the only reasonable approach to integrate complex environents without abandoning long-standing IT infrastructures.

Nelson Mattos, director of integra tion information at IBM's Silicon Valley Laboratory, says, "As change hap ens in the marketplace, you have to be able to move pieces of data around quickly in a way that doesn't require you to redo your entire system.

Sure, it would be great to always have a central data repository and a clean access environment. But that's not practical for most companies because of mergers, new suppliers, legacy systems and a host of other reasons. And even if it seems practical the money to build a central reposits ry isn't in the offing. So a federated approach could be the answer.

DAVID MOSCHELLA

Lessons From A London Traffic Project

NYONE WHO HAS ever tried to drive across London knows that its traffic is among the world's worst. That great city just wasn't built for cars. Most streets are too narrow, and even the wide nnes get bogged down by countless traffic lights, roundabouts, bus lanes and seemingly endless construction and repairs. The slightest accident. own or, beaven forbid, snow can reduce large sections of the city to hopeless gridlock.

Happily, it now appears that IT can help. On Feb. 17, London switched on its controversial system for charging for congestion, whereby from 7:00 a.m. to 6:30 p.m. on weekdays, anyone driving into a roughly 8-square-mile zone of central London is charged £S (about \$8). Despite many dire warpines, the system has mostly performed as promised. Better still, the volume of cars in the central city has noticeably declined. Thus far at least, the strongest proponent of congestion charging, London Mayor Ken Livingstone, is all smiles.

Here's how it works. According to the Capita Group, the project's lead contractor, there are 174 entry and exit points to the charging zone, each of which is monitored by banks of analog cameras. Some of them capture license plate numbers. Each captured number is sent to a central database that checks whether the owner of that car has paid the required fees nr has one of several exemptions. Those

who haven't are fined. The philosophy behind congestion charges app to transcend political ideology. Livingstone is aften affectionately referred to here as "Red Ken," becau of his generally far-left - though jovial - views. However, the idea of using pricing mechanisms to reduce excessive traffic has been championed by Milton Friedman since the 1950s, and the only other major city to adopt

this type of approach is Singapore,



OPINION

ardly a favorite of the left. For IT vendors, traffic anagement systems are a potentially large new public-sector opportunity (something that is clearly needed right now). Consider that the current system covers less than 2% of Greater London and, more important that bundreds of cities around the world are closely monitoring this initiative. If London's sucness continues other cities

will surely follow. But for IT users, the main message is one of leadership.

Congestion charges are a good examole of a system that can't be done incrementally, can't be easily prototyped and has to work effectively from Day L. Someone had to make the larve upfront capital investment and accept the associated risk. In London's hyper

easy. The left has attacked the planas both unfair to the poor and worrisomely Orwellian, the right as just another tax increase. Both sides doubted that such a complex, quasi-governmental system would ever really work Whether or not you support congestion charges, London's example shows how IT industry leadership is moving away from suppliers and toward cus tomers, who must provide the leadership, risk-taking and perseverance that IT progress has always required (this is the main theme of my recent book). In this sense, congestion charges are just one example of the many impor-

tant new systems that IT is capable of

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columns are on our Web site: critical political culture, this wasn't

HOW ABOUT "The Last Chap ROT instead of "The Next

In his beach. The Index

Chapter: ROF [QuickLink 35564]?

Thorp painted out the myth of ROL

Thorp makes the distinction be-

tween (I projects and business

erate value: If generates costs

change programs. (If doesn't gen-

Technology is an expense. For that

expense, you can get a capability

READERS' LETTERS

A Strict Focus on ROI Can Be Limiting The Myth of ROL

WITH REBARD TO the special ation that can on cous [QuickLink k2340], ClOs and IT managers may be limiting their results by becoming top facused on ROI. While measuring return on any are project is important, it costive ROI numbers. Mary Haigis

idn't be the low determinant of success. As your writers pointed out, the associated soft benefits, such as engrowing customer relatorchips, are difficult to measure. But, in actuality, it is the soft bene lits, not the ROI, that can disrupt markets and create true competitive advantage and business value. Technology innovation that

prestes true, sustainable business when doesn't always fit into a need ment tool. The focus on ROI is a good starting point, but focursing strictly on project numbers ess results can be dangenous. Without taking a holistic view of the organization, melticancles can be displaced from one ertment to another. While the ROI numbers may look good, the om-tine business benefits may

Instead communies should focus on delivering sustainable business value and pay close attent to leveraging george and processes as well as technology if is this

petitive adventage. In the end, true business value and increased comcettive adventage will help a company succeed, and that success in more important than generating

Managing partner, Clarksto Considting Durham, N.C. mhaigin@clarkstonconsulti

Calculating True ROL Associated Risks officed by Information Economics

EXPITE WHAT IS SAID in the Darbole Tough Task Why RO is important" (Quoted ank 35951). ill's impact on an organization of militable and measurable. Enk Brympolisson's statement that "up to 90% of the costs and benefits of (T investments are in intempbles" is and plain wrong. (T investments, in general, are some of the reducest ennents a company will make. The risk comes from the underlying uncertainties that are inherent to the cost and benefit variables that make up the IT investment. Very

Sew methods have been suppose in correctly calculating the true ROI along with its associated risks. An exception is the Applied Informa-

we use a technique called the clarification chain: If it is better, it is different in some relevant way. If it is different in some relevant way, it is observable, if it is observable, it is observable in some amount; if it is, observable in some amount, it can be measured. The main reason (T enalysis refers to intampbles is that most people aren't properly trained to citally what a decision variable means. Everything that is real for an IT evestment is renssarable.

David Groneki

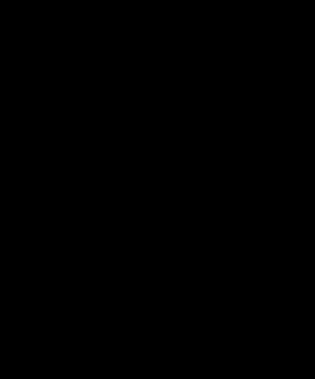
Executive vice president, Information Economics

nothing more. For the organization to get value - to generate a return on investment - another key thmo has to happen. Someone has to year this capability Most often, that requires a change in processes or be-Parador (McGraw-Hill, 1999), John havor and a harvesting of those handles. Then the construction nets.

ngly, what Thorp and his Increa group called the "information paradax" - the reason we don't get will ue from IT - is not a result of failing. to build the capability. We are gettion hatter and hatter at building technical solutions. It is instead a result of failing to make the secon sary changes in people, processes Inc. As part of the AIE methodology James Morrison Sandringham, Victoria,

> **COMPUTERWORLD** welcomes ents from its maders, Letters will be edited for brevity and clarity. They should be addressed to Jame Eckle, letters editor, Computerworld PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701 Fax: (506) 879-4843.

> include an address and phone number for enmediate verification.



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IT progress has always required (this is the main theme of my recent book). In this sense, congestion charges are just one example of the many important new systems that IT is canable of supporting Fortunately the major of Londoo has provided the necessary leadership, much to the benefit of the entire high-tech community #



value

More columnists and triks to archives of previous objectives are on our Web site.

DAVID MOSCHELLA

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the Capita Group, the project's lead

A Strict Focus on ROI Can Be Limiting

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creates true, sustainable business volue cionso'i always fit into a nout esupement tool. The focus on ROF is a good starting point, but locusing stactly on project numbers vs. business results can be dangerous. Without taking a holistic view of the organization, inefficiencies can be displaced from one department to another. While the ROI numbers may look good, the battom-line business benefits mey he lacking

Instead, companies should forus on deliverno sustamable busi ness value and pay close attention to leveraging people and processes as well as technology it is this.

combination that can repole conpetitive advantage. In the end, true petrive advantage will help a company succeed, and that success is more moortant than generating positive ROI numbers.

Mary Haigis Managing partner, Clarkston Consulting Durham NC mhagissisclarkstonconsulting

DESPITE WHAT IS SAID in the Is Important" (QuickLink 35951). IT's impact on an propagation is quartifiable and measurable. Enk. Brynofisson's statement that "up to 90% of the costs and benefits of If investments are in intangibles" is ast plan wrong (Tinvestments, in general, are some of the riskest investments a company will make The risk comes from the underlying encertainties that are inherent to The cost and benefit variables that make up the IT yountenent New

lew methods have been successful in correctly calculation the true ROI along with its associated risks. An exception is the Applied Information Economics (NE) methodslopy

The Myth of ROI ROF protect of "The Last Chapter

Chapter ROT (Queld et 3558417 In his book The Information Paradox (McGraw-Hill 1999), John Those pointed out the myth of ROI Thorn makes the distinction between IT projects and businesschange programs. If doesn't gen erain value if peninsites costs Technology is an expense. For that expense, you can get a capability

Calculating True ROI, Associated Risks

utilized by Information Franchics Inc. As part of the A/E methodology we use a technique called the clarfication chain it is better it is difdifferent in some relevant way, 4 is observable if it is observable it is observable in some amount; if it is observable in some amount it can be measured. The man reason (T analysis refers to intampibles is that to clarify what a decision variable means. Everything that is prolifer an (I investment is measurable David Grenski

Executive vice president, Information Economics

demonskii/ininforconomics.her

nothing more. For the grossyzation to get value - to generate a return on investment - another key thing has to happen. Someone has to use this canable. Most often that orguires a change in processes or be benefits. Then the organization gets

Increasingly what Thoro and his croup called the "information page dox" - the reason we don't not value from IT - is not a result of failing to build the capability. We are getting better and better at building technical solutions. It is instead a result of taken to make the neces sary changes in people, processes and organizations James Morrison

Sandringham, Victoria. Austrolia COMPUTERWORLD welcomes

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KNOWLEDGE CENTER OPERATING SYSTEMS

Getting Started With Linux
Many IT shops are just starting to explore the
Linux phenomenon. Here's some advice from
veterans such as Dan Agronow (right), vice
president of technology at The Weather
Channel, on issues such as version control,
luckus, fail over and support. Page 40

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The Worldwide Code Rebellion

More and more foreign governments are encouraging the use of open-source software by government IT managers. It's a powerful movement that has many roots, including anger over licensing terms set by U.S. vendors, the lecriness of being locked into proprietary formats and a desire to build homogroom expertise. Page 46

EDITOR'S NOTE

THE TRADE PRESS IS very, very good at reporting what the leading-edge users are doing. When Unilever said it would move to Linux in a big way, for example, Computerworld reporter Todd R. Weiss was all over it [QuickLink 3586s]. And rightly so.

But my hunch is that for every Unilever, there are thousands of IT operations that baven't dipped their toes in the Linux waters and might even be a little scared to do. so. Or maybe their Linux use is limited to a few servers and they're wondering how to dree in and swim with the penguins.

Similarly, the trade press is very good at covering the companies that move to IBM's latest 2/OS operating systems or Microsoft's newest version of Windows Server, But what about the rest — the folks sticking with older OS versions, often for mighty good reasons? If the leading-edge IT users are comparable to the cultural trendsetters in California Paris, what

about Prota? In terms of sheer numbers, about 80%, of the mainframes out there are running IBM's older OS/90 operating system. And Microsoft itself estimates that up to 40% of the installed base for the Windows NT Server OS is using the older Windows NT Server 4.0. (Why? Because it's reliable, and it's hard to cost-justify a disruptive upgrade.)

That's why this special report has stories for Linux newcomers and OS/990 users under pressure to migrate to z/OS, and about users still on Windows NT. It's devoted to the hordes on the lagging edge. Hella, Peorial b

Mitch Betts is director of Computerworld's Knowledge Centers. He can be contacted at mitch betts@computerworld.com.

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O QuickLink k1500



In the Slow Lane



Legions of laggards aren't jumping on the latest OS bandwagons.

COMPLIANCE OR



BETTER WHEN EVERYTHING WORKS TOGETHER.

performed

N THE LARKY DAYS of computers, the operating system — the software that manages applications and system resources — didn't exist. That's because software itself didn't exist. Computers were programmed by manually writing calculating circular together, then physically changing the writing for every new calculation to be

That began to change in 1945, when John voo Neumann describled a computer that could store instructions in memory that would tell the computer's calculating units what to do. On June 21, 1948, the first computer program ran on an experimental machine called Baby at the University of Manchester in Enrich and and software was born.

an England — and software was born. But computers still ran only one program at a time. Operators still had to load each program and its data into memory from tape or punched cards, run the program and then expect the whole process for the next program. It was faster than changing the wiring, but it still wasted pleasty of very expensive computer time.

By the early 1950s, businesses using computers were looking for ways to solve that problem. In 1955, programmers at the General Motors Research Center came up with a solution for

The Story So Far

Bell Labs, GM and MIT played major roles in the development of operating systems. By Frank Hayes

their IBM 701 computer: a batch-processing monitor program that let operators put a series of jobs on a single input tape. It was the first step toward a full-scale operating system.

tull-scale operating system.

Computer vendors soon offered
their own batch monitors. In the early
1960s, they began to add what would
become critical operating system features. The Burroughs 5000 Master
Control Program offered virtual memory and the ability to run several proc-

esses at once. Univac's EXEC I allocated memory, scheduled CPU time and handled I/O requests. IBM's OS/360 allowed the same software to run on a variety of machines.

In 1963, a team at MT I fed by Fernando Corbato developed the Compatible Time Sharing System (CTSS), the first practical OS that tes several users at once run programs from terminals. Much of that team soon went to work on a far more ambitious OS: Multics, a joint project with General Electric Co. and ATOT Bell Laboratories that AT&T made the Unix source code available for students to study. By the 1980s, Unix had spawned a generation of workstations — and displaced many existing operating systems.

Meanwhile, the first desktop computers arrived in the mid-1970s with OSs that were little more than the monitors of 20 years earlier. When IBM began settling PCs in 1981, it offered several OSs — but the least expensive and most popular was PC DOS, provided by a small company named Microsoft Corp.

Microsoft soon dominated PC operting systems, seedily borrowing features from its competitors, such as the Windows graphical user interface cribbed from Apple Computer Inc.'s Macintosh, Microsoft also offered Xenix, the most popular PC version of Unix, and worked with IBM to develop the properties of the PMP. The state of the PMP American Competition of the PMP Microsoft patternship fell apart, and Microsoft merged its OSZ work with its popular Windows to create Winter popular Windows to create Win-

dows NT in 1993.
Finaish student Linus Torvalds
want trying to compete with Microsoft in 1991 when be began work and
Unix clone he called Lanze. After farshing a first wriston, Torvalds and
for help from other programmers on sillscale, free operating system. By 1994 is and the competence of the competence of the competence
are on more internet Web servers that
Microsoft OSs — and was Microsoft's
most simiflacen competition.

would offer a tree-structured file sysscale, free operating system. By 1999, it ran on more Internet Web servers than tem, a layered structure and many other modern OS features. Microsoft OSs - and was Microsoft's AT&T pulled out of the Multics most significant competition. project in 1969. But AT&T program-Today, Linux runs on everything from handhelds to mainframes, while mers Ken Thompson and Dennis Ritchie began to develop their own versions of Windows span oearly the scaled-down version of Multics, which same range. How competition - and they punningly called Unix. Unix was interoocrability - between Windows and Linux develops may shape the easy to port to new computer architectures and grew popular future of enterprise computing. at universities because And now, on with the story 1963: Ferrando Corbato 1976: Doitel Research on first deesses CPIM, first wide reserves da OS/2 OS/2 a multitardion debuts with PC DOS on work with Win-CTSS the first newton PC concepting medical eth stored programs time-sharing system. what he Microsoft a Windows NT. 948: Baby, at the 65: MIT. G G1: Firmish student Lie inc and AT&1 ter in England, runs the

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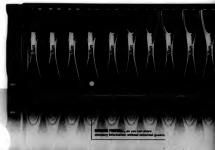
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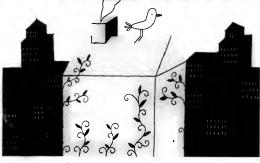
Legions of Windows NT Server users aren't ready to jump to a new version or haven't finished upgrading. And they have darn good reasons. By Carol Sliwa

IT'S NO SECRET THAT MICROSOFT CORP will direct a special marketing pitch at Windows NT Server 4.0 users when the company releases its Windows Server 2003 operating system next month, just as it did for Windows Server 2000. And its announcement of the phaseout of support for NT Server 4.0 certainly caused hordes of users to sit up and take notice.

Yet despite Microsoft's pushing and prodding, there are legions of Windows NT Server users that aren't ready to move or haven't finished their migrations.

the installed base for the Windows server operating system is using NT 4.0. He hases that in part on a year-old report in which market research firm IDC predicted it would be 33% at the end of last year. Gartner Inc. analyst Tom Bittman thinks the number of NT Server users could be higher. Bittman says

Bob O'Brien, a group product manager in Micro soft's server division, estimates that 35% to 40% of he stands by 60% to 20% based on client anecdotes.



and information from Microsoft. Whichever figure is closer to the truth, one simple fact is clear: There's still a lot of Windows NT Server 4.0 in use Period

Microsoft knew that when it decided to extend key support options for NT 4.0 through 2004. Its aging operating system was scheduled to slip off the support charts at the end of 2003. But Microsoft couldn't afford to

risk damaging relationships with its precious corporate customers, particularly the really large ones that were getting anxious about running an unsupported operating system. O'Brien says today's NT Server 4.0 users are divided into three camps: those who have a policy to run an operating system for five to seven years, those

who have key business applications and file-andprint services running on NT, and those who are ton cash-strapped to do frequent upgrades. Like any vendor, Microsoft would prefer that cus-

tomers leap to new products as soon as they hit the market. But users that have stuck with NT 4.0, which has been available since July 1996, often have the following pragmatic reasons for holding out:

Sig moves take time. KeyCorp had 1,900 non-Unix servers running Lotus Notes, file-and-print services and some business applications. The Clevelandbased financial services company wanted to stay in sync with or slightly ahead of Microsoft's support phaseout, so it devised a two-year plan to go to Windows 2000, says Wade Tolman, executive vice president of enterprise technology operations.

"The biggest challenge just becomes planning when you talk about touching that many servers and employees," says Ann Louis, vice president of enterprise technology operations at KeyCorp KeyCorp's IT department upgraded 450 servers some from NT 4.0 and others from Novell Inc.'s Net-

Ware -- to Windows 2000 during the past year. Originally, the plans called for the remaining 1,300 Windown NT and SO NetWare servers to be done by year's end, but competing projects are interver and the migration is expected to extend into 2004. The delay will open the door for a new option Windows Server 2003, which is due in April. But Tol-

man says he doesn't feel a sense of urgency to change the existing migration plan, since support for Windows 2000 will last for many years. KeyCorp might instead consider skipping the Windows 2003 release and wait for its successor, codenamed Blackcomb, which Microsoft claims will be

out in 2005 or 2006. Tolman says. Business-critical applications were built for NT 4.0. Farmers rance Group purchased Version 6 of Siebel Systems Inc.'s software, the core application of its claims division, in 2000, says Sherry Porter. listributed systems manager at the Los Angeles-based compar The application was built to run on NT 4.0, and because Siebel didn't add support for

THE REDMOND VIEW esolt offers advice on how the from Windows Server F

how NI is being "retired in releases" - at this Web caree. over microsoft con-leteWindows 2000 to that particular insur ance version until the end of last year. Farmers didn't gain the option to move from NT 4.0 until recently As many users are well aware, ven-

dors don't always rush to certify their older applications to run on newer operating systems. 'They won't necessarily certify it unless you have

enough clout or they have some compelling reason." Porter says. Siebel was seeing so much Windows NT among its customer base that it released Siebel 7 in November 2001 on both Windows 2000 and Windows NT 4.0.

even though the newer operating system had already been out for 21 months, a spokeswoman for San Mateo, Calif-based Siebel says. When Microsoft announced that support for NT 4.0 would end, farmers could have upgraded to

Siebel 7 on Windows 2000, But the insurer didn't find the new features useful enough to justify the expense, Porter says. Another major consideration was that Farmers' Siebel 6 application was so heavily modified with custom code that an upgrade would have been "a

dramatic amount of work," Porter says. So the IT department is drawing up a plan to move its Siebel 6 application to Windows 2000. However, some companies don't get that option They have to upgrade to a new application on a new operating system, stick with the old application on an unsupported operating system or buy a support

contract for NT from a Microsoft partner. NT 4.0 works just fine, thank **YOU.** Companies that have upgraded to Windows 2000 Server may be impressed with its improved stability and performance, but many others that are still running NT find that the older OS has reached a solld enough state to meet their needs.

CE Franklin Ltd. has 16 Windows NT 4.0 servers running file-and-print, mail, intrapet and terminal services. The six terminal servers may get upgraded this year, but there's no upgrade plan for the rest

"NT is the beast we know," says David Curran. manager of IT at the Calgary, Alberta-based oil field supply company. "We know what it takes to keep it aline and healthy, and without a real strong bust case to move to Windows 2000, we haven't been able

The end of support may create the case that pushes Curran to consider a "grudging upgrade." But be says be doesn't think it would be dangerous to run NT unsupported. "For the most part, these servers

are stable," he says. Curran says be's intrigued by the notion of skipping Windows 2000 Server in favor of Windows Server 2003 so be can extend the life cycle of CE Franklin's server operating systems and defray

licensing costs "You not only have to pay for server licenses; you have to pay for hundreds of client-access licenses and that just drives the cost through the roof," says

Upgrades disrupt the busines Like many organizations, Navy Exchange Service Command in Virginia Beach, Va., has a heterogepeous mix of servers. The retailer, which employs more than 16,000 people in 108 dispersed locations. runs its most critical applications on 100-plus Unix boxes. But it also

has a collection of Novell and Windows NT servers "We don't see anything that's going to drive us off NT Server in a rush," says CIO Bill Finefield. "Usually by the time something like that gets to the end of its supported life, it's pretty stable. And we don't do anything exotic with it. If it's running today, chances

are it'll be running tomorrow Finefield says it's the end of support for an application, not for an operating system, that drives upsendes at his organization. "It's not the operating system that's so important to your business," be says.

"It's the applications that run on it." One reason Finefield is reluctant to upgrade server operating systems is the disruption it would cause to Navy Exchange Service's business. Finefield cites the time that would be needed to stage, configure, test and deploy both the new operating system and any application that runs on it. Plus, new operating systems typically require more memory, processing

"It starts a ripple effect, requiring you to invest in additional hardware and training and resources to keep up with it," he says. "After you've gone through all that, you just don't want to touch it for a while."

power and storage.

Where's the ROI? Metropolitan Health Corp. in Grand Rapid Mich., has 54 Windows NT 4.0 servers running health care, financial and supply chain application databases and various utilities. CIO Bill Lewkowski says that with so many applications, it's hard for his organization and its application vendors to keep up with Microsoft's new releases

from a time and budget standpoint. Also, it's hard to calculate a buge return on inve ment from an infrastructure upgrade in comparison with projects that directly affect end users, notes

Lewbowski. So Metropolitan Health plans to wrap its server architecture decisions in high-level business goals, says Randy Truax, manager of technical services.

Truax hopes to tie the operating system upgrade to a server consolidation project, since Metropolitan, tike many companies, runs one application per NT server — often because its application vendors wrote them that way.

Metropolitan Health will also try to cost-justify the operating system upgrade by clustering servers, because Truax wants the IT department to be able to patch machines without having to take them off-line, so end users who are expected to increasingly rely on computer systems instead of paper won't lose ac-

cess to their applications. "I want to drive the cost of the infrastructure as

low as I can - but not give up stability or scalability" Trees sees 8

Time Is Running Out

As IBM phases out its aging OS/390 mainframe operating system, users must migrate to z/OS. By Jaikumar Vijayan

HEN IBM STOPPED Selling its OS/990 operating system by OS/990 operating system of the beautiful of the clock started ticking for users of the mainframe system to switch to the newer 64-bit 2/OS. Users who delay making that transition could find themselves marooned on an unsupported platform in the not-to-distant

ported platform in the not-too-distant future, users and analysts say. This isn't a big surprise. "IBM has been very aggressively informing and reminding people about this for a number of years," says Mike Kahn, an analyst at The Clipper Group Inc. in Wel-

Institute Mass.

IBM released z/OS in October 2000, along with new 64-bit x5-rice maintained frame hardware. Already, IBM is nois to fourth version of z/OS and poised to phase out support for OS/990 technology, For example, support for OS/990 technology. For example, support for OS/990 technology. For example, support for OS/990 technology. For example, support for S/990 technology. Os. 400 technology. For example, support for Version 2.09 will case this month. The company has for some time.

The company has for some time now been telling OS/390 users to move to its latest release, z/OS L4, not only to ensure continued support, but also because IBM will use this release as a base for future hardware

In addition, z/OS 1.4 is the last release of z/OS that OS/390 users will be able to migrate to in a single step. Moving to future z/OS releases from OS/390 will involve a two-step process. Analysis estimate that more than 80% of mainframe workhoads are currently running on z/OS. However, the machines running OS/80% for outnumber Steries systems because the machines running OS/80% for curnumber Steries systems because the 0S/80% machines tread to be much smaller, says Phil Poyne, president of feathum Research in Great Studeley, England. "Numerically, [OS/80% machines] account for 80% of the mainframes out there, but they don't account for much of the power." He says.

of the power," he says.

The difficulty of the migration task depends on the release of the operating system and the hardware that users

are currently on, say users.
For instance, users who are on OS/
390 Version 2.10 can move to z/OS 1.4
and cootinue running the operating
system and all applications in 31-bit
mode on their existing 31-bit System
390 hardware.

390 hardware.

For such users, the migration really is no different from moving to any new operating system release, says David Danner, a Washington-based consultant who recently beiged a large government agency migrate to z/OS.

For the many users who aren't ready

or can't afford the move to a full 64-bit eovironment, which involves buying expensive new zScries hardware; running z/OS in 31-bit mode on S/390 hardware should do nicely users and at 80% week

moule on S790 hardware should do nicely, users and analysts say:
The University of Florida's data center in Gainesville, for instance, has already migrated to a 33-bit #2/OS environment on its existing:

S/990 mainframes. "It is current code, and it allows you so keep up with new functionality as you need it," says John Bevis, associate director of the data center.

High Coete of Hourarding

High Costs of Upgrading
But for the moment, the university has
no plans to switch to 64-bit mode on
z/OS because of the bigh upgrade

costs of software licenses and hardware. "The processor and software costs can kill you," says Bevis, a former president of Share Inc., an IBM largesystem user group. "I don't think 64-bit (functionality) is what's driving some people. It's support and continued maintenanes." Clipper Group's Kahn says.

Users who want to take advantage of full 64-bit functionality need to prepare well for the transition from a 31-bit environment, Danner says. Code and applications that work well in a

31-bit mode don't always migrate easily to x/OS, says Eric Bielefeld, a senior MVS systems programmer at P&H Mining Equipment, a unit of Joy Global Inc. in Milwaukee. "We had problems with a buffering

product and a data-compression product," Bielefeld says. Fixing the problems required intensive work with the vendors involved. "It took me a good six months

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to install and test everymiguring to 3/50 is moletis
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Users on releases of OS/390 prior to 2.10 "face a whole bunch of change all at once," Danner says, including moving to z/OS in mul-

tiple stages.

For its part, IBM has done a lot to ease the migration to the 64-bit world.

users and analysts say.

A "bimodal migration program,"
which allows users to switch between
31- and 64-bit mode, has been particularly useful, says Bielefeld. With it,
users can move applications over to a
64-bit 2/OS covironment and, if prob-

lems arise, move them back to 3t-bit mode while those problems are fixed. IBM has also restructured its pricing models to minimize the software upgrade costs associated with moving to 2/OS. And IBM handbooks and other materials that provide detailed technical help are available. B

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Choose Your **Path Wisely**

AIT Family

Sony AIT data storage solutions provide a strategic alternative to

linear tape formats.

As Robert Frost makes clear in his famous poem, "The Road Not Taken," picking one path over another can make all the difference. While Front had other topics in mind at the time, his point is nonetheless applicable to today's comparises that are using or considering linear tape formats such as DLT, S-DLT and ITO as their data storage solution

Legacy formats such as Digital Linear Tape (DLT) were a reasonable data storage alternative in the past, but a combination of new turiness challenges and new technology choices are driving many companies to rethink their tape storage path. For guargole conventional DLT systems are approaching the end of their useful life cycle, with no well-defined way to ad without upgrading to a new format. While Super DLT (S-DLT) and Linear Tage Open (LTO) systems do have roadmaps to the future, neither format offers a compatible solution that can span the garrent of storage needs, from the entry or workstation level up to the "Super Drive" level. In addition, sporades require a media change, making long-term use of linear solutions more cumber-

some and loss flowble Perhaps, as Frost suggests, it's time to consider a different path. Advanced Intelligent Tape** (AIT) data storage solutions from Sony provide a broader range of capacities, increased performance, better reliability, easier maintenance and a more

Tage format Digital Linear Tage (OLT) Super DLT (S-DLT) Linear Tape Open (LTO) Seay Advanced Intelligent Tope (AIT)

strategic cath to the future than the alternatives. Organizations choosing the AIT path will find themselves with a more flexible and integrated tage storage format that can span beckup needs from individual PCs, to workgroups, to the enterprise

Canacity

SECR SA MICE

50GR to 110GR

100GR to 200GR

25GB to 100GB

AIT is a proven storage technology with years of succe enterprise deployments behind it. First appearing in 1996. AIT is a compact, helical scan 8MM tage format in a 35-in,, half-height form factor. With its high capacity (up to 100GB per cassette) speed and reliability. All is emerging as a more strategic tape

One Platform: Full Coverage Sony AIT is the only technology that covers

the entire backup and archiving spectrum.

Canacity/Performance High-end network and enterprise backup/archiving

Performance/Price Focus Mid-range network backup/archiving

Low-end desktop backup

storage path compared with linear formats such as DLT, S-DLT and LTO. Consider the following advantages of AIT. inhibitor - Consistent operation and assured reliability are two critical components for a tape storage system. AIT-3 drives are designed for a mean time between failure (MTBF) of up to 400 000 hours (compared with DLT's 250,000 MT8F rating) and a 10% duty cycle

LTO

S-OLT

In contrast, DLT-IV media is notonously unreliable, subject to the often severe leader problems that are common for leaderbased tapes. All, on the other hand, has a soft loading system, which allows it to load the media without using

motors or lovers. This greatly decreases the stress on the tages and increases the longevity of the media. In fact. A/T can even perform a soft load from the middle. of the tape

nea - With organizations facing increasingly bence backup volumes and a greater need for faster recoveries for business continuity, drive performance is critical. For large backup applications, AIT compares favorably with the higher speeds of S-DLT and LTO. But for interactive applications. AIT is far faster because of its superior land, seek and rewind times. For example, AIT has a 39-second access

speed, compared to 80 seconds for S-DLT and LTO. . Micration Path - Currently in its third generation. All has a defined and proven resomep that has seen performance and capacity double with each new generation. In addition, all three occurations of AIT drives available today are both read and write hardward-compatible. S-DLT drives, on the other hand, can not

write to OLT cartridges, severely limiting their usefulness. Industry Support — AlT was created by Sony, one of the co-symptoms of the Distrat Data Storage (DDS) tage former, and AlT

is an open technology supported by more than 27 partners including HP/Compag. Qualistar. Advenced Digital Information Corp (ADIC) and Spectra Logic. In addition, leading backup softwere packages such as Veritas Software's Veritas Backup Exec and NetSackup, Legato Systems' NetWorker and Computer Accordance: CA ReportStor ARCserve are all compatible with the

• Size - In backup, less is more. For example, A/T-3 provides at least 250% greater capacity than DLT At its 100GB cap AIT tages are comparable to S-DLT 110GB and LTO 100GB modeis but at aust one-third the size Simply put, this means it's much easier to use A/T for automation and tape libraries because it takes up so much less room. In fact, many companies are able to get twice the number of AIT drives in a given library compared with traditional half-inch drives. All also has the world's first 1U autoloader (courtesy of its low power consumption and small modic size), making it the perfect fit for tight locations

Some programmers fear that switching to a different backup tage format will be difficult and costly But it can be done painlessly If you follow a standard 30-day backup cycle, most of your organization's data will be on newer AIT tages within a morth. In addition. Sony bundles NovaStor migration tape copy software with each AIT tape drive or library, making it easy to copy critical or frequently-used tapes from other for-

mats onto AlT Data harkuns should be there when you need them. But you shouldn't have to dudicate valuable IT personnel to maintaining finicky tape drives, juggle discens of tapes to find what you're looking for or wait minutes for hours or days) to retrieve valuable data. Sony's AIT data storage solutions enable organizations to get on the right path for compatible, reliable and high-performance tage backup AIT is simply the smart investment

Time Is

As IBM phases out its aging OS/390 mainframe operating system, users must migrate to z/OS. By Jaikumar Vijayan

IBM STOPPED selling its OS/390 operating system last December, the clock started ticking for users of newer 64-bit z/OS. Users who delay making that transition could find themselves marooned on an unsup ported platform in the not-too-distant

future users and analysis say This isn't a big surprise. "IBM has been very aggressively informing and reminding people about this for a number of years," says Mike Kahn, an analyst at The Clipper Group Inc. in Wellesley Mass

IBM released z/OS in October 2000, along with oew 64-bit zSeries mainframe hardware. Already. IRM is into its fourth version of v/OS and poisod to phase out support for OS/390 technology. For example, support for OS/390 Version 2.10 - which is the last OS/390 release - will cease in September 2004, while support for Version 2.09 will end this month. The company has for some time now been telling OS/390 users to move to its latest release, z/OS L4.

not only to ensure continued support, but also because IBM will use this release as a base for future hardware

In addition, 2/OS 1.4 is the last release of z/OS that OS/390 users will be able to migrate to in a single sten. Moving to future 7/OS releases from OS/390 will involve a two-step process

Analysts estimate that more than 80% of mainframe workloads are currently running on 2/OS. However, the machines running OS/390 far outnumber zSeries systems because the OS/390 machines tend to be much smaller, says Phil Payne, president of Isham Research in Great Stukeley, England, "Numerically, IOS/390 machines) account for 80% of the mainframes out there, but they don't account for much

of the power," he says. The difficulty of the migration task depends on the release of the operating system and the hardware that users are currently on, say users. For instance, users who are on OS/ 390 Version 2.10 can move to z/OS 1.4 and continue running the operating system and all applications in 31-bit mode on their existing 31-bit System 390 hardware

For such users, the migration really is no different from moving to any new operating system release, says David Danner, a Washington-based consultant who recently helped a large government agency migrate to z/OS. For the many users who aren't ready or can't afford the move to a full 64-bit

environment, which involves buying expensive new zSeries bardware. More information about nunning 2/OS in Whit mode on S/390 hardware of EM's new should do nicely, users and analysts say The University of Flori-

da's data center in Gainesville, for instance, has already migrated to a 3thit z/OS environment on its existing S/390 majoframes, "It is current code and it allows you to keen up with new functionality as you need it," says John Bevis, associate director of the data center.

High Costs of Upgrading But for the moment, the university has no plans to switch to 64-bit mode on

z/OS because of the high upgrade costs of software licenses and bardware. "The processor and software costs can kill you," says Bevis, a former president of Share Inc., an IBM Jargesystem user group "I don't think 64-bit [functionality] is what's driving some people. It's support and continued maintenance,"

Clipper Group's Kahn says. Users who want to take advantage of full 64-bit functionality need to prepare well for the transition from a 31-bit environment, Danner says, Code and applications that work well in a 31-bit mode don't always migrate easily to z/OS, says Eric Bielefeld, a senior MVS systems programmer at P&H Mining Equipment, a unit of loy Global

Inc. in Milwaukee.

I BM's Web site

"We had problems with a buffering product and a data-compression product." Bielefeld says. Fixing the problems required intensive work with the vendors involved. "It took me a good six months TECHNICAL DETAILS to install and test every-

thing," says Bielefeld. migrating to 2/05 is available whose company moved to a 2/OS environment last October. Users on releases of OS/390 prior to 2.10 "face a whole

bunch of change all at once," Danner says, including moving to z/OS in multiple stages

For its part, IBM has done a lot to ease the migration to the 64-bit world, users and analysts say A "bimodal migration program,"

which allows users to switch between 31- and 64-bit mode, has been particularly useful, says Bielefeld. With it, users can move applications over to a 64-bit z/OS environment and, if problems arise, move them back to 31-bit mode while those problems are fixed. IBM has also restructured its pricing models to minimize the software upgrade costs associated with moving to z/OS. And IBM handbooks and other materials that provide detailed techni-

cal help are available.

Choose Your Path Wisely

Sony AIT data storage solutions provide a strategic alternative to

linear tape formats.

As Robert Frost makes clear in his famous poem. "The Road Not Taken," picking one path over another can make all the difference. While Frost had other topics in mind at the time, his rount is nonetheless applicable to today's compares that are using or considering linear tape formats such as OLT, S-DLT and LTO as their data storage solution

Legacy formats such as Digital Linear Tape (OLT) were a reasonable data storage alternative in the past, but a combination of new business challenges and new technology choices are drawing many companies to rethink their tape storage cath. For evample, conventional DLT systems are accomaching the end of their useful life cycle, with no well-defined way to add canacity without upgrading to a new format. While Super DLT (S-OLT) and Linear Tage Open (LTO) systems do have roadmaps to the future. neither format offers a compatible solution that can span the named of storage needs, from the entry or workstation level up to the "Super Drive" level. In addition, upgrades require a media change, making long-term use of linear solutions more cumber-

some and less flexible Perhaps, as Frost suggests, it's time to consider a different path Advanced Intelligent Tape^{the} (AIT) data storage solutions from Sony provide a broader range of capacities, increased perfromonce, better reliability, easier maintenance and a more

Tale of the Tape

Tage format Digital Linear Tape (DLT) Super DLT (S-DLT) near Tape Open (LTO) Sony Advanced Intelligent Tage (AIT)

strategic path to the future than the alternatives. Organizations choosing the AIT geth will find themselves with a more flexible and integrated tape storage format that can spon backup needs from individual PCs, to workgroups, to the enterprise

AIT is a proven storage technology with years of successful enterprise deployments behind it. First appearing in 1996, AIT is a compact, helical scan 8MM tape format in a 3.5-in , half-height form factor. With its high capacity (up to 100GB per cassette) speed and reliability. All is emerging as a more strategic tape

One Platform: Full Coverage

Sony AIT is the only technology that covers the entire backup and archiving spectrum.



ODS Replacement

storage path compared with linear formats such as OUT, S-OUT and ITO Consider the following advantages of AIT · Reliability - Consistent operation and assured reliability are two critical components for a tape storage system AIT-3 drives are designed for a mean time between failure (MTBF) of up to

In contrast, CLT-IV media is notprously unreliable, subject to the often severe leader problems that are common for leaderbased tapes AJT, on the other hand, has a noft loading system. which allows it to load the mode without using

00% Are note

Copacity

10GB to 40GB

50GB to 110GB

25GB to 100GB

160GR to 200GR

metors or levers. This preatly decreases the stress on the tapes and increases the longevity of the modia. In fact, AIT can even perform a soft load from the middle

· Performance - With presugations facing increasingly larger backup volumes and a greater need for faster recovenes for business continuity, three perfromance is critical. For large backup applications. AlT compares favorably with the higher speeds of S-DLT and LTO But for interactive applications, AIT is fail faster because of its superior load, seek and reward times For example, AlT has a 39-second access

spend, compared to 80 seconds for S-DLT and LTO · Migration Path - Currently in its third generation, AIT has a defined and proven roadmap that has seen performance and capacity double with each new generation. In addition, all three generations of AIT drives available today are both read and write hariwant compatible. S.DLT drives on the other hand, can not write to OLT cartridges, severely limiting their usefulness Industry Support – AIT was created by Sery, one of the co-inventors of the Digital Data Storage (ODS) tape format, and AIT

is an open technology supported by more than 27 partners including HP/Compas, Qualstar, Advanced Digital Information Corp. (ADIC) and Spectra Logic. In addition, leading backup softwere packages such as Vernas Software's Ventas Backup Exec and NetBackup, Legato Systems' NetWorker and Computer 400,000 hours (compared with DLT's 250,000 MTBF rating) and a Associates CA BrightStor ARCserve are all companies with the

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Microsoft

Worried about version control and support? Here's a guide for Linux newbies. By Robert L. Scheier

D HEAR SOME PEOPLE TELL it. Linux is taking the world by storm. Unilever. a \$52 billion consumer products giant, is switching to Linux to run its businesses around the world Major vendors such as IBM, SAP AG and Computer Associates International Inc. are portine mainstream business applications and utilities to the lowcost, open-source operating system.

But not every IT shop is out on the leading edge of Linux; many are just starting to explore the open-source phenomenon. For them, Linux's practical implications are a major concern. IT managers face day-today challenges such as how to perform version control and how to back up and restore data. They also need to know how much training their staffs will need and whom to

call for technical support at 2 a.m. The good news: You can do almost anything on Linux that you can do on a mainframe or distributed systems. The bad news: It will require you to learn ome new concepts and terminology.

1. Version Control You may think of the open-source community as worldwide chaos,

with developers releasing dozens or hundreds of bur fixes and undates each month that need to be evaluate ed and tested before deployment. Actually, it's not that different from the computing environments IT managers have lived in for years, say some users. *Microsoft is announcing a new

security breach [that requires patchingl almost every day," says Dan Agronow, vice president of technology at Atlanta-based weather forecasting service The Weather Channel Interactive Inc., which runs Weathercom. And mainframe vendoes find highly pervasive errors in their operating systems just as often. That doesn't mean open-source

updates can't seem, well, chaotic. In the past year, Islandia, N.Y.-based CA has seen almost 20 versions of the operating system kernels for different flavors of Linux, says Vincent Re. chief architect at CA. If you're a husi-

ness customer, you're likely buying a distribution from a major vendor, such as Red Hat Inc., SuSE Linux AG or The SCO Group, that tests the updates, packages them and sends them to customers through Internet services such as the Red Hat Network. only for their own Linux distribu-

Vendors usually provide updates tions; customers must go to other software vendors for updates to other Linux-based utilities or business applications. (For example, Red Hat doesn't distribute Oracle Corp.'s Linux offerings.)

As with Unix, in the Linux world, version control is referred to as "package management," save Frik Troan, director of product marketis at Red Hat in Raleigh, N.C. Each pack are is a single file that comes with metadata containing critical informa tion such as which version of the Linux kernel and which associated software is needed to run the file, he says. Customers with strong Unix skills can test and evaluate the updates themselves, says Re. Version control

tools include the Red Hat Package

Manager, which can also manage up-dates from other distributors. The Caldera VolutionManager from SCO in Lindon. Utah. combines software distribution with services such as asset management and system monitoring. Third-party tools include CA's AllFusion Harvest Change Man ager for distributed Linux systems and its Unicenter Software Delivery

for Linux on the mainframe Update tools such as the Red Hat Package Manager aren't perfect, of course. Red Hat woo't support rollback (reversing a software update if it doesn't work) until the next release of its Advanced Server and Advanced Workstation in the fall, save Troam. Rollback is already available in Version 1.2 of Red Carnet Foterprise from Ximian Inc. in Boston

Customers also face uncertainty over whether the new patches will run older applications or device dri-vers. Linux "doesn't have the reputation for forward and backward compatibility" customers have come to expect from mainframe operating systems such as z/OS, says Re. Some

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No Big Deal

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distributors have also balked at including device drivers or other software from vendors that have refused to include the source code in order to keep it from competitors

Jeff Davis, global technical lead at Amerada Hess Corp., uses Red Carpet Enterprise to update about 350 seri ers running various versions of Red Hat Linux. The tool lets the New York-based energy company create 'channels" that automatically send updates for the Apache Web server to Linux servers but not to Linux desk-

But just as with Windows or mainframes, po good IT manager applies those Linux patches willynilly. Instead, says Agronow, "you have a scheduled maintenance cycle." Agronow updates his approximately 250 Linux

servers once per quarter, only after testing to be sure the updates are safe. 2. Support

You can get as much hand-holding as you want (and are willing to pay for) from the Linux distributors or betterknown vendors such as IBM and Hewlett-Packard Co. "Just because the development mod-

el is open doesn't mean the support model is any different than what rou'd find with a proprietary OS," says Timothy D. Witham, lab director at the Open Source Development Lab in Beaverton, Ore., and a Computerworld. com columnist [QuickLink 36[48]. Or, if you have the skills and mind-set, you can turn to the open-source community itself and get better support than you would from a vendor you naid, say

When calling IBM for support with its WebSphere application server, Agronow had to slog through a script of questions read by a first-level support technician before being referred to an expert who could solve the

problem.

After migrating to the Tomcat op source application server in June 2000. he used Web sites and forums to get his questions "out to many different experts all at the same time." Not only did Agronow get answers more quickly, but he rarely was told to upgrade to the latest and greatest version" of the vendor's software to fix the problem,

Major vendors such as IBM and HP offer round-the-clock service, as do Linux distributors such as Red Hat and | charter.net.

SCO. "A number of Fortune 100 companies, such as Morgan Stanley, rely on our support every day," says Red Hat's Troan. Such support is included along with all upgrades and bug fixes with Red Hat's Advanced Server Premium Edition license for \$2,500 per machine

3. Training If you're coming from a well-trained

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from wendors such as BM, HI Rad Hat, SCO and SuSE.

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Unix shop, anywhere from a couple of days to a couple of weeks should be enough to get you going on Linux, say

vendors, analysts and customers, Staffers coming from a Unix or Windows background will, however, need training on functions such as partitioning before managing IBM's z/VM mainframe operating sys-

tem, says Re-Becoming a Red Hat Certified Technician generally requires two weeks of training, with another two weeks to become a higher-level Red Hat Certified Engineer, says Troan, Agronow says he wants one to two years of job experience for a junior administrator and four to six years for a senior ad-

Many customers, such as Amerada Hess' Davis, are skeptical about the value of the several flavors of Linux certification available on the market.

One hopeful note on training: Davis says Linux requires less ongoing train-ing than Windows because there are fewer differences among the various flavors of Linux than there are between, say, Windows NT and Windows 2000. With Linux, he says, "we're not retraining our staff every time a new version comes out."

Best Practices Count

Overall, the customers and analysts say that critical data-center tools and processes are rapidly moving to Linux. "If you're coming from a background where you have the disciplines in place for communicating changes, making changes and doing upgrades, and you apply those disciplines, you're going to have success," says Agronow. "If you're in an environment which is a free-forall, where things are constantly change ing and there are no controls and no standards," he says, you're going to fail - with Linux or with any other operating system.

Scheier is a freelance writer in Boylston, Mass. He can be reached at racheier@

Logical Volume Manager

DEFINITION

A logical volume manager is a software tool that allows storage drive space to be added or expanded on the fly without system reboots or shutdowns, giving systems administrators more flexibility for operations.

s LINUX systems administrators watch over their

hardware and software infra ernsetures, they constantly have to look ahead to how much space to allocate to hard-disk partitions to meet

changing needs. But the process of dding disks or recon figuring existing drive space is slowed when servers have to be takon off-line for new drive installation and time-consuming rebooting or

backup, repartitioning and data restoration. Those changes can more easily be made using a logical volume manager (LVM). which precludes the need for reboots, shutdowns or downtime. Thus, an LVM can be an

administrator's best friend. Microsoft's Windows and Sun's Solaris and other Unix operating systems have similar volume manager capabilities. Under Linux, an LVM is enabled by a kernel-loadable

module, similar to a device driver in Windows, Kernel modoles capture disk functions from user operations and convert them to write to the correct part of the disk. They work like a file system driver. but are far more dynamic. Support for an LVM wasn't built into the Linux kernel un-

til Version 2.4. but it was available as an add-on. It

has been an important tool as Linux continues to make its way into enterprise computine.

"It's a common feature because it's so useful," says Chris Mason, a Linux kernel developer at Nurembure Germanu-based Linear pendon SuSE Linux AG. "A lot of people, especially in Windows. may not know a lot about it," Mason says, "It's an extra layer to learn about, so a lot of people don't. Then when they move from a smaller server to a larger server, they don't real-

ize how much more easily they can make it work." The LVM creates an abstraction layer over all the combined storage in a system, so that the details about where the data actually resides are hidden. That allows the total separation of hardware and software because the LVM keeps a table of where the data is written and what volume group and volume it belongs to, allowing drives to be added or changed even while the system is running. And all this happens without software applications or users noticing

the changes. Systems without LVMs are also set op with physical hard drives, but they don't have this virtualization layer. When more disk space is needed, the system must be shut down and the new drives installed, and then they must be provided with file systems to organize data storage. If the new drive is replacing the original drive, the old drive must be backed up so the new drive can receive its

Organized Resources With an LVM, the physical drives or hard disks are orga nized Into "volume groups Created inside those volume groups are "logical volumes," which are comparable to disk partitions in systems without LVMs. By keeping the hardware and software separate. drive changes can be made without shutdown or reboot-

data. That all takes time.

ing, and data can be moved to a different location while the system is running Joaquin Ruiz, vice preside of marketing and product

management at Minneapolisbased Sistina Software Inc., which has largely developed the LVM for Linux as an opeosource program, says the LVM is important because it makes it much easier to administer storage.

Management Is Key "The bottom line is manage ment," Ruiz says, Without a volume manager, the burden of how to represent and deal with data storage is left up to the developer of the application you want to run, be says.

That potentially permits "apolications to be stepping on other applications" as they compete for disk space, says Ruiz. That's why all robust onerating systems have volume management features, he says Sistina contributed the LVM technology to the Linux opensource community to improve the lineage, he says. By adding

the LVM, Linux becomes more

scalable. The LVM aggregates

information about physical volumes, which are the actual hard-disk partitions, and presents them through the file system to the applications. Sistina's LVM is supported by the standard Linux kernel version, beginning with 2.4. Red Hat 7.3 and Red Hat 2.1 Advanced Server editions, and is built natively into Red Hat 8.0. It is also supported by SuSE 7.3 and 8.0 and SuSE Linux Enterprise Server Z. SuSE. was an early supporter of the LVM and has included the

Sistina IVM in all its operat-

ing systems since SuSE Linux 6.3. It was also built into UnitedLinux Version 1.0, which is packaged and sold by the four UnitedLinux partners, It's compatible with all major Lin ux applications, including Web applications, databases and the Sambo file-sharing system Brian Stevens, senior direc-

tor of ampinopring at Rod Hat Inc. in Raleigh, N.C., says the LVM addresses three areas for IT administrators; availability, performance and manageability of storage drive space. "Administrators love it because it gives control, uptime and doesn't waste space," be says. Presently, the Red Hat Linux Advanced Server operating system doesn't include an LVM natively, but Red Hat

partners with Veritas Softwar Corp. in Mountain View, Calif, to offer an LVM as an add-on. LVM software will be included in the next version of Advanced Server, Stevens says, Red Hat is more concerned with adding to the OS enterprise-mandated features such as scalability, threading and clustering capabilities before adding an LVM, eveo though customers have asked for it. Stevens says

"It is a committed feature for the next version," be says.

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Streng

UnitedLinux, an alliance of four companies battling the Red Hat juggernaut, has made some progress in its first 10 months. Here's an update. By Todd R. Weiss

YEAR AGO, they were rivals, four companies each fighting for a tiny share of the Linux server market but not gaining much ground on U.S. market lander Red List Inc.

Then last May, the rivalry was replaced by a partnership called United-Linux, bringing the former competitors together to share technology, expertise and development costs as they worked to build a standardized, enterprise-ready Linux operating system to compete head-on with Red Hat's best.

How have the first 10 months shaped up for UnitedLinux partners SuSE Linux AG in Nuremberg, Germany: The SCO Group Inc. in Lindon, Utah; Turbolinux Inc. in Tokyo; and Conectiva SA in Curitiba, Brazil?

"I think they can be successful," says Bill Claybrook, an analyst at Aberdeen Group Inc. in Boston, "UnitedLinux and Red Hat will share the U.S. market. which is a pretty large market. Each company, though, still has to be successful alone."

Claybrook says the partnership of

fers the companies economies of scale. "They are sharing a number of costs that are not talked about publicly that lower their overall development and support costs," he says. The alliance's version of Linux will likely be the boost that some of the current and potential partners need to keep going, he says. So far, the effort has shown progress by attracting independent software vendors to port their applications to UnitedLinux and by creating common support and call centers to help cus-

tomers. Claybrook says. "I would give them an A- at this point; however, we will see a lot more in the next year. One thing the UnitedLinux members have going for them is the [operating systeml itself. I would give it an A+ "Each of the number individually

didn't have a whole lot of market penetration" before joining up, says IDC analvst Al Gillen. "What they've done in effect is out all their cards together to have a bigger deck." Gillen says he would have argued a year ago that Wakefield, Mass,-based UnitedLinux would have a tough time

taking on Red Hat's dominance. But since then, Raleigh, N.C.-based Red Hat changed its server licensing, requiring customers to purchase a copy of its server operating system for each machine, just as UnitedLinux requires. Because those terms are more restricrive than a traditional Linux license, it levels the playing field somewhat," Gillen says.

Here's what the alliance has offered users in its first 10 months:

Uniformity and Robustness Gregory Blepp, SuSE vice president of

international sales, says customers have gained uniformity and robustness. under UnitedLinux. Although none of the companies has a worldwide presence, each has local market strengths that helped build the alliance, he says. The real global coverage was missi so this was one of the driving factors of UnitedLinux," Blepp says.

The companies sell their own branded versions of UnitedLinux. The core operating system is the same in each. but extra add-ins vary. Each com ships its own version on four CDs. including three with the core UnitedLin-

The first version of UnitedLinux Enterprise Server, based on SuSE's Linux Enterprise Server 7, was released on schedule in November, and a "carriergrade" version for the telecommunications industry is in the works.

Easier App Certification With UnitedLinux, software vendors

can now build just one version of an application for certification on one platform, instead of having to get it certified with each of the four compa nies. Riego says. That sayes costly porting, testing and certification steps and is already encouraging more developers to create new business applications for UnitedLinux, he says Each partner adds special attribute he says. SuSE and SCO bring combined

development resources, while Turbo-

Linux distributions for many different spoken languages. Conectiva specializes in easy deployment and support Stacey Quandt, an analyst at Giga Information Group Inc. in Cambridge, Mass., says the alliance got off to a slow start by not providing an easy means for software developers to port their products to UnitedLinux, That changed with the announcement in January of a UnitedLinux Developer Zone Web site. "It was a major short coming, and now they have addressed that." Quandt says.

linux brings expertise in localizing the

Longer Cycle Times Paula Hunter, general manager of UnitedLinux, says another key benefit

for corporate users is that the partnership has scheduled release cycles for future upgrades that are longer than traditional open-source software release cycles. That gives business users more time to be sure their needed applications will run well, she says, Morrover, the alliance can provide support to customers from any of the partners as needed. Hunter says, "It's important to realize that we're a global concern," she says. Hunter says that because United-Linux didn't begin shipping its server operating system until November, ana-

lysts haven't yet recognized its grow ing popularity among customers. "It's still a little early for them to be counting (unit) shipments. We are winning major brand-name accounts here in the U.S. We recognize that's where the analysts want to see traction," she says. Late last year. Turbolinux sold its operating system business to Software Research Associates Inc. in Tokyo. which is continuing the partnership in UnitedLinux, says Fumiko Doi, director of marketing at Turbolinux. The company remains committed to the effort, she says.

IBM, Hewlett-Packard Co. and Advanced Micro Devices Inc. have signed on as technology partners in support of UnitedLinux, IBM and HP are sup porting both Red Hat and UnitedLinux on their Linux hardware.

Quandt says that even as the No. 2 player in the U.S. market. UnitedLinux has the potential to chip away at Red Hat's leadership if its (software vendor) ecosystem matures rapidly." Elsewhere in the world - Europe, the Middle East, Africa, Latin America and the Asia-Pacific region - Red Hat's

penetration is lesser and often exceeded by the individual UnitedLinux partners. In such places, UnitedLinux could erode Red Hat's market share, she says, \$

UnitedLinux Arrives

Are wires gel

enterprise?



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The Worldwide **Code Rebellio**

Discontent over proprietary soft-ware from U.S.-dominated vendors has foreign governments exploring open source. By Patrick Thibodeau

> gaining ground with governments in Europe and elsewhere, as officials look for ways to cut IT expenses and free themselves of deindence on U.S.-based vendors. This isn't a short-term phenomenon. It's a worldwide movement, and there are a lot of reasons behind it. proprietary lock-in on things as basic as document and spreadsheet file for-

planned obsolescence. They also seen't happy about paying costly licensing fees to forcign suppliers for products that don't meet all their needs

The U.K.'s National Health Service. in a study last year on the feasibility of open source, warned that the market for health care IT is becoming dominated by a small number of U.S.-based vendors. These systems are expensive to buy and maintain, and since "the U.K. represents a relatively small part of the market, global suppliers are unresponsive to requests for local variations, and/or provide them at a very

high cost," the report says. 'It's about money, plain old-fashioned money," says Atul Chitnis, a Linux expert at Exocore Consulting Ltd. in Banualore, India, in an e-mail interview about that country's moves to open source. "But it's also a bit about sovereignty." Chitnis is an adviser to the government-sponsored Linux India

One goal of pushing open source is to foster the development of homegrown high-tech businesses and expertise. The movement is also related to feelings about Microsoft Corp's world wide dominance in productivity applications and desktop uperating systems Carol Kelly, an analyst at Meta Group Inc., calls it the "Microsoft backlash." But while some local agencies are considering or have deployed Linux desktop systems, most of the owernmental interest is in server deployments.

Stirring the Pot

Indeed, the European Commission is involved in multivear studies examinine open-source development for server software and its total cost of ownership. There are obvious licensing say, ings with open-source models, hur total cost of ownership is a por with many ingredients, including integration, training and migration.

A European Commission-backed study completed last year advocates "pooling," or sharing, of open-source software code among various countries, as well as sharing IT knowledge and development expertise. Pooling may not necessarily save money, but by working together, governments may get much more for their cures. "Pooling of knowledge is more im-

portant than pooling of code" says Patrice-Emmanuel Schmitz, a Belgium based Unisys Corp. consultant who coauthored the report Governments in Europe, Singapore Taiwan, China and elsewhere are

adopting policies that encourage IT managers to consider deploying open source systems. In the U.S., neither the federal experiment nor any states have adopted anything similar, but federal officials are showing interest in open source at the midrance server level.

Tight Budgets, Lean Code The revenue shortfalls that are forcine

many states to curtail IT investments are also fostering more interest in open-source software, "What we're finding is an awful lot of good tools that are open-source-based that offer a tremendous amount of functionality." says Rock Revan, CIO for Connecticut's state government. "In some cases, we don't need the Cadillac version of software that some vendors have sold." It's difficult to say whether any government interest in open source will influence private-sector migrations. especially when big firms like IBM are

In the U.S., it's lone been recognized in IT that the private sector leads and povernments follow, says Eric Raymond, a Malvern, Pa-based developer who heads the Open Source Initiative But in some foreign nations, businesses "view governments as the genuine leadership of the country," he says. One thing to watch for is whether large governments establish procurement policies that require software vendors tu provide open and interoperable file formats in order to get government business.

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The Consumer Project on Technology (CPT) in Washington has been urging the White House to du just that, as a way to blunt Microsoft's operating system monopoly. Only a big government has the buying power to force a vendor to make changes, says CPT head James Love. "There is nobody in the private sector that is big enough to set standards by themselves," he says.

O&A WITH EUROPE'S IT LEADER

software policy official, discusses the open-source entiatives under way in Europe



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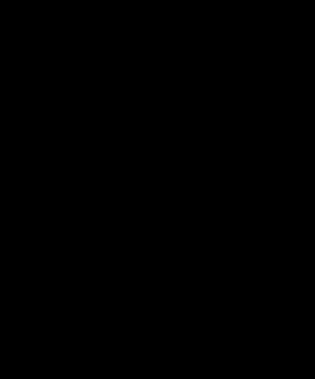
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The Worldwide **Code Rebellion**

Discontent over proprietary soft-ware from U.S.-dominated vendors has foreign governments exploring open source. By Patrick Thibodeau

> PEN-SOURCE SOFTWARE IS gaining ground with governments in Europe and elsewhere, as officials look for ways to cut IT expenses and free themselves of dependence on U.S.-based vendors. This isn't a short-term phenom It's a worldwide movement, and there

are a lot of reasons behind it. Governments are concerned about proprietary lock-in on things as basic as document and spreadsheet file formats, and they're leery of using soft-

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source at the midrange server level. **Tight Budgets, Lean Code** The revenue shortfalls that are forcing many states to curtail IT investments

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COMPUTERWORLD

MARK HALL

Does the OS Matter?

ALK TO BILL GATES. Talk to Linus Torvalds. Talk to Steve Jobs. What you'll hear is that operating systems matter a lot. Talk to a CIO, and you'll hear something quite different.

I've been talking to quite a few senior IT executives at dozens of large organizations— from Boeling and FedEs to state governments and entroper universities— and while everyone agrees that operating systems are important parts of their IT infastructures, they also agree that they matter less and less. Even though the compelling controversy of Linux vs. Windows may keep deviation of the compelling controversy of Linux vs. Windows may keep deviation are to the control of the compelling controversy of Linux vs. Windows may keep deviation are to liquid their convert the deviation. Knowing that is no robably eviting the Micro-

soft's chief software architect a nightmare or two.
That's not to say that staff concerns
about the pluses or minuses of one
technology over another don't matter.

They do. But they're tactical issues that are internal to IT and not strategic issues about the business, which are what CIOs think about. Plus, operating system maturity per-

Plus, operating system maturity permits CIOs to ignore the "problem" For the first time in memory, standard, proven, supported and, for the most part, reliable and fast operating systems cover the gamut of IT needs.

When the answer to your question is always just around the corner, you cease to concern yourself with the problem. Believe me, for IT strategists, the operating system debate is all but dead. Need to deploy PDAs to your sales force? Need

a Web, database or file-and-print server? Which operating system to choose isn't the first question you'll ponder. Instead, you'll ask yourself: Are the right applications available? Does our IT staff have tertaining to work with the new system? Will it fit into our budge? Can it be customized? Who will service and support the technology?

Naturally, the choice of operating system is crucial. But there's no right or wrong answer here. At the high end, Unix proponents can't legitimately slam the competition (read: Windows) as not having the performance, reliability, scalability or breadth of applications to compete for data center environments. For departmental and Web servers, Microsoft can't chide Linux users that they'll be left in the cold if they adopt the opensource operating system. (After all, the service and support from IBM is generally considered a cut above that from Redmond.) Even at the desktop, where Windows is a legally sanctioned monopoly, users are choosing Mac OS X and, at many government sites, even Linux, and finding satisfaction because the real issues of application availability, support and cost are

being answered.

If I'm right and the operating system is no longer a critical part of IT's decision-making process, then platform-specific vendors such as Microsoft and

Sun will be at a disadvantage compared with the likes of Hewlett-Packard and IBM, which sell and service just about every operating system you can name. If you beat only one drum but your listeners want a symphony, you'll lose

your audience.

Of course, Microsoft and Sun have more instruments at their disposal. But when charting with IT executives, vendor representatives all too often stress their respective platform advantages, when those things matter less and less. I think that vb ecause in both companies there is a fierce competitive tradition centered on their core technologies. It's a tradition that's served them well for two decades. And it persists today.

I recently talked with Paul Harmon, a senior consultant at Arlington, Mass.-based Cutter Consortium, about a report he wrote last month on Microsoft's response to Limux. "Microsoft likes having an enemy because it gives them focus." he told me. And Limux is now the enemy. While that strategy may rally the troops at headquasters, it no

longer inspires customers.

Sun, which has modified its initial Linux-is-theenemy approach, continues to view Microsoft as inthe evil empire and treats Windows with distinTo do so is foolish. Sun is in effect telling its customers that they are supporting a wicked company and are stupid for using its products. Seems
like a noor marketine stratesy to me.

My guess is that the smart people who made these companies great will realize that the operating system game is over. And they'll turn their attention to issues that matter. I



SNAPSHOTS

Mission-critical?
When will you run mission-critical
applications and databases on Linux
2003: 72.
2004: 107.

2005; al. 2007 or beyond: 8° ... Hover: 11° ... Den't knew: 53° ...

BASE: 176 respondents at Gartner's 2000 Date Center Conference: total exceeds 100% because of rounding source databases, at services cover

Windows Replacement

Would you consider replacing or bypassing Windows servers w Linux II near-equivalent applicatio existed for Linux?

ocember 2002: Yes. 7720

Base 179 respondents at Garinor's Data Center Conferences source seathern conference cone



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Windows, Linux Books Coming This Spring Here's a sampling of forthcoming

books about operating systems. as reported by Publishers Weekly. · Linux on the Mainframe, by John Eilert. Maria Eisenhaendler, Dorothy Matthacus and Ingolf Salm (Prentice Hall, May 2003)

Inside Windows Server 2003, by William Boswell (Addison-Wesley, March

20033 Linux Server Hacks, by: Rob Flickenger (O'Reilly

March 2003) does Server 2003, by Jerry Honeycutt (Microsoft Press, March 2003)

 Microsoft Windows Server 2003 Administrator's Companion, by Char-lie Russel, Sharon Crawford and Jason Gerend (Microsoft Press, April 2003) · Linux Security Cookbook, by Daniel J.

Windows Server 2003: A Beginner's

Barrett and Richard Silverman (O'Reil-Guide, by Martin Matthews (Osborne,

Windows Server 2003: The Complete Reference, by Kathy Ivens (Osborne,

April 2003) Do You Need a 'Meta OS'? As if it's not enough for CIOs to have to migrate to newer versions of Windows

or decide whether to jump on the Linux bandwagon, now there's a buzz surrounding the fuzzy concept of a "meta operating system. As analyst Amy D. Wohl

president of Wohl Associstes in Norberth Ps. rocently explained in "Mid dleware Spectra," a meta operating system is a grand scheme to use automated tools to help IT organizations configure, monitor, manage and

control their entire computing environments. Already, major vendors have meta OS initiatives under way. For example, IBM has its antonomic computing effort [Quick-Link 323421, and Sun Microsystems Inc. offers NI management software [QuickLink 33051], Grid comparing Web services and storage virtualization Wide, But Not Deep

Evens Data survey found that 60

A quarter to half # 9.3% Half to three markets. | 12%

More than three quarters | 1,8% SOUNCE THAN DATA COM

Meanwhile, she says, "Microsoft will try to create a new scale of operating system where the desktop and the corporate server are merely pieces of some much larger operating system environment which is under Micro-

soft's control." The automated management tools of a meta OS could solve a lot of problems for short-handed IT operations but Wohl's article notes that CIOs will have to be persuaded to let a computer do work now performed by IT staffers. Patent Watch Eye tracking to manage computer

resources. A video camera monitors which application window or display the user is looking at, so a special oper-

ating system can allocate more resources to that application or display (and less to the others). For example, if there are two monitors, the monitor that isn't being used will go into standby mode to save power, inventor: Brian R. Nickerson at Intel Corp

- U.S. Patent No. 6,526,159, issued Feb. 25 Running multiple Java applications simul taneously, regardless of the operating system and without invoking separate Java erpreters. An embedded software module sits between the lava virtual machine and the multiple Java applications and allows the open applications to communicate with each other, without conflicts. Inventor: Kumanan Yogaratnam at Espial Group Inc., Ottawa. - U.S. Patent No. 6.513.158, issued fan. 28

 Intercepting certain operating system ges to make retail kiosks more use friendly. Kiosks typically use off-theshelf PCs and software (to keep costs down), but some of the standard features, such as tool bars, dialog boxes and the right-click of the mouse, are unnecessary or detract from the user experience at public kiosks. Those kiosks need to be foolproof, so a daemon program operates in the background to block selected operating system messages. Inventors: Michael T. Madl. William P. Shaouy and Marcus F.

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Research Roundun In a survey of 400 Linux software de-

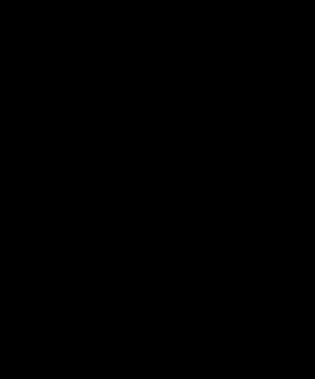
velopers by Evans Data Corp., 94% of respondents said their Linux system hasn't been infected by a virus, and more than 75% said their Linux system has never been backed The No. I barrier to Linux adoption

is inertia: Many users are satisfied with their current non-Linux operating systems, according to a survey of 100 IT managers by The Goldman Sachs Group Inc. The No. 2 barrier is the lack of packaged applications available for Lines

 In an Evans Data survey of 1,000 software developers in China, 65% of the respondents said they expect to write an application for Linux this year, and 44% said they have already

done so. **RF RESOURCES** th links and how to articles, are available at





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Lowdown on Linux Skills

What you need to do to learn Linux and land a job that puts your skills to use. By Sharon J. Watson

HAT DOES IT MEAN for IT professionals now that Linux is finding its way into a growing number of corporate settings? For systems administrators the corporate IT people most likely to be affected by Linux adoption - it means they'll have another operating system to learn as their compunies capitalize on Linux savings by retraining

"It's definitely a year of cost containment," says Fran Linhart, director of certifications at The Computing Technology Industry Association Inc. in Oakbrook Terrace, Ill., which offers an entry-level Linux certification. She notes that it's easier and cheaper to retrain existing staffers than to hire new ones. Indeed, employers paid for most of the 20,000-plus professionals certified by Linux Professional Instit Inc. in Brampton, Ontario, through the end of 2002, and for the approximately 6,600 profes-

sionals who qualified for the Red Hat Certified Systems Engineer designation On the applications side, programmers and developers may be called on to port Unix-based applications to Linux systems or to write

new ones. But they won't need to learn new languages: They can develop applications for Linux in C Con or lare That's the key to Linux, say its supporters. The opgrating system will revolutionize the cost of backend servers and create new jobs over time, building

on basic programming, networking, administrative and business skills that many professionals already have, say those who use it. "You don't need to understand business policies and practices any more or less with Linux than with other systems," says Bill Thompson, director of IT at The Sherwin-Williams Co.'s paint stores group. "You still need to meet the needs of the user, and Linux gives you a lot of tools to accomplish that." The

Cleveland-based retailer is moving to Turbolinux.

In addition to understanding networking basics such as TCP/IP, administrators must know the idiosyncrasies of the commercial Linux distributions their companies run (such as the Red Hat or SuSE distributions). Linux certification programs also test for skills in networking services associated with Linux

including the GNU Object Model Environment Apache Web server, Samba file sharing and others.

Training Unix users in particular find Linux easy to learn.

"Anyone who knows Solaris or any major Unix platform could easily switch to Linux," says Brian Dewey. network engineer at Raymour & Flanigan Furniture Co. The Liverpool, N.Y.-based company runs 600 Linux-based terminals in 50 stores, as well as a Linux-based Domain Name System and e-mail, and Apache and Oracle back-end servers.

Dewey says he taught himself Linux the way many professionals recommend learning it: by downloading a free or inexpensive Linux distribution and experimenting with it.

Formal training options include vendor-neutral courses such as those offered by Linux Certified Inc. in San lose and courses from vendors like Red Hat Inc. Local Linux user groups are also excelleot sources of practical information about Linux deployment. Two online sources for Linux information, downare www.linux.com and www.destingtionlinux.com

Linux skills offer a boost to administrator salarie which have been dropping, says David Foote, presi dent and chief research officer at Foote Partners LLC in New Cansan, Conn., and a Computerworld column nist. Systems administrator salaries averaged \$78.712 in total compensation last year - a decrease of 9.9% from 2001, according to Foote's "Quarterly IT Professional Salary Survey

loadable distributions and other links

However, homes pay for Red Hat and Linux Professional Institute certifications increased last year with the median bonus at 8% of base pay for Red Hat Certified Systems Engineer and at 7% for the Linux Professional Institute's Level 2 certification at year's end, according to the firm's "Quarterly Hot Technical Skills and Certifications Pay Index."

OURLE-EDGED SWORD

ption is on the row, but don't expect to see a himing boom I anytime soon. The wave of learning Linux means existing



Employee Spotlight

yer: Alaska Pacific University, Anchorage reet IT staff: Fight D-second résumé: His early career expe

included selling and installing hardware, software statel Inc., a wendor of Unix-based higher educ tion systems in Feirlax, Va. He joined Alasha Pacific in 1969, managing a mix of Red Hat Linux-Unir- and Windows-based servers. One of his first projects was helping to set up two routers using Linux. Skills beest: Bloe, who runs Red Het Linux on his ktop PC at work, offers this advice: "Download a d Hat distribution, load it on an old PC, buy a be

sic Linux book, then play with it. Get Linux to dial into your ISP, get the Web browsers up, set up an FTP server - it's very powerful." Bice says he picked up his first copy of Linux around 1994 and used it on a home PC not only to learn Linux but also to become versed in Unix skills. "I'd be very comfortable taking someone with deep Linux skills and putting them over a

lans server," he says. Learning Linux at home or via cl ther career doors too, says Bice. Someone could download MySQL and PostgreSQL, learn hern on Linux and build a solid background for becoming an Oracle database administrator. "All those skills would transfer," Bice says.

Having a mix of Linux and other operating sys-sms skills and experience will be vital for IT pro-ssionals, he predicts. For example, the university is seeking a webmaster to manage its Red Hat Linux Web server running MySQL and PHP. "A dows duy would be lost on that, Bice says. But a faculty/student Web server is Windows based, and the webmaster will be expected to support those applications as well. "We need both skill sets." Bice says.

Watson is a freelance writer in Chicago, Contact

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The Next Chapter

Predictions: Security will be the No. 1 factor in choosing a server operating system. And Linux will be hugely successful but fragmented.

Server operating systems will continue to ascend in importance as more and more Web services are implemented. The underlying security and reliability models of Windows Server, Solaris and Linux will become the basic points of competition and differentiation. As the use of Web services grows, companies will make server OS selections based on their security and reliability rather than just basic price/performance. Sheldon Laube, chairman, CenterBeam Inc., Santa Clara, Calif.

III LESS IMPORTANT

Operating systems will become irrelevant for application development. Instead, developers will write for the next layer up — application servers — for new. Web-enabled applications. Application servers will become the new operating systems by 2005. They are higher-level constructs and offer portability across the old-style operating systems

Marc Fleury, president, IBoss Group LLC, Atlanta

A THREE TWO Within five years, there will be three

prominent server operating systems that dominate the market: Linux, Windows and Solaris. Five years after that there will be two: Linux and Windows. In addition, more enterprise funcnality will be bundled in the operating system - like Web servers, volume managers, messaging and transaction gers - making the lines between

more blurred and causing great pain for some enterprise software vendors. ■ Pete Manca, vice president of software enrineering. Evenera Inc., Marlboro, Mass.

In April 2004, Microsoft will ahandoo the .Net platform due to irresolvable scalability problems and the slow adoption of C#. This will cause no discernable change in enterprisewide planning, however, because no one is

really sure what .Net is Gerald Boyd, director of research, NCS Technologies Inc., Piscataway, N.I.

PROPRIETARY DINOSAURS Proprietary operating systems for servers are the dinosaurs of the Webenabled world. Over the next five years, server operating systems will inevitably consolidate toward two alternatives: expanded versions of Linux. and Windows running on rapidly scal-

able blade servers with industry-standard processors While a few OS niches may remain for specialized needs, such as constop reliability, even these are likely to be

provided by extensions Shel Travis, vice president of research. MigraTEC Inc., Dallas

WEB SERVICES Support for distributed component ar-

chitectures and Web services will become a standard embedded layer in all widely used server operating systems. By 2004, Windows, Unix and Linux operating system and middleware even will evolve to advanced Web services

capabilities, such as federation and collaboration features Michael Katz, managing director PricewaterhouseCoopers' Global Tech-

nology Centre, Menlo Park, Calif. III FINANCIAL SERVICES Linux and open-source software will

experience substantial growth in 2003, particularly in the financial services industry, which has been an early and successful adopter cation integration takes hold. Linux

As the Web services model for appliand open source will find increasing use, because the specific technical profile of the Web services provider will be irrelevant as long as it complies with the published standard at the

interface ■ Craiz Miller, chief technology officer, Dimension Data North America, Reston, Va.

III FRAGMENTATION, AGAIN

Within 10 years, Linux on the server side will make up over 75% of the market, but it will become fragmented, just like Unix. The players will be Red Hat Inc., UnitedLinux and various flavors of Linux from hardware vendors such as Dell Computer Corp. and IBM. Scott Testa, chief operating officer,

Mindbridge Software Inc., Norristown, Pa. # A WINDOWS WORLD

The winner in the server operating system wars will be the one that does

the best job at enabling a robust and easy-to-use Web services framework. Uotil the major Linux players join tosether on an effective and uniform Web services strategy, we're destined

to live in a Windows world. # loel Young, vice president, Dist International Inc., Minneapolis

SECURITY IS JOB 1 In the wake of Code Red, Nimda and

the recent SQL Slammer worm, security will be come the determining factor in choosing an operating system during the next 12 months. The major vendors will be forced to integrate security patch management. nonintrusive upgrades and better logging and detection systems to partici-

pate in the corporate world. Opeo systems like Linux, running on tandardized hardware from traditional vendors, will gain more and more market share due to a fear of Microsoft products' security and license fees. I Jeff Guilfoyle, vice president of systems and security, Solutionary Inc.,

III WINDOWS ADVANCES

Windows Server will gain increasingly complex features, including workload and partition management capabilities. The sophistication of Unix operating systems' current workload and partition management features will increase as well.

Michael Katz, Pricewaterhouse

Uncle Sam Meets The Penguin

Before the year is out, several state poveraments and departments of the federal government will announce strategic initiatives to convert all or part of their IT infrastructures to Linux. Government users are attracted to Linux. because of the lower cost of ownership (at a time of budget deficits), better security and the use of nonproprietary data formats. - Ben Roythist, co-founder and president. Quadric Solutions Inc. Propagator N. I.

Juux will be the operating system of choice in the U.S. Defence Department before 2010, probably by 2005. This is because the system is open, can be fully doc-umented, is secure, supports virtually all proces-sors and is supported by major computer and use contractors. - Chuck Jecobus, CEO Cybernet Systems Corp., Ann Arbor, Mich.



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IT Careers Diversity Report Country's Newest Industry Presents Same Face

Despite the rapid growth and interests of competition to raterited professionals. The information technology profession has trivened the fore of its workforce

Tyrone Taborn founder and president of Caree-Communications Group Inc. (publisher of US Black Engineer) says the data is clear about the situation. Less than 10% of the If workforce is comprised of black Americans. There is a contin undinced for new employees, estimated at better than \$60,000

in 2003. Beyond on a brack population that is 12% of the total American popularion, about 12 000 blacks should be entering the IT worldocce this year. Yet

less than 2 000 blacks named end-neering degrees in 2002 message is clear - the shortage

any better and among the factors marache from the shortage of students. Nine historically black

black IT graduates. That leaves plenty of room for improvement among the more than 160 rither accordited distroy scopparts in attracting and matriculating black TF students

A number of includiors are underwes to path as well as pull enrollment including the second annual FamilyNet event held in February during Black History Month. The weeklong event helps push technology into black homes that from a

social economic stance might not otherwise use if. Taborn says the effort is designed to also demonstrate to black families that technology can improve their

hers - from a healthcare and information standards as well as the ability to expose a new generation early to the jobs of the luture - bridging the

cliche dental desde The Federal Bureau of Labor Statistics reports that one in seven American workers is employed in -disension behagings, eight out of the 10 fastest growing occupa-

number of all job mouth through 2006 will come in IT This a with from the dot com built that tech was just a fad," Taborn

son. "It has permeated every aspect of the American economic Opportunites do exist"

One of the errors occurring during the dat cam blast was that more attention was paid to having people to push product and ser sice to market rather than developing a highly qualified workforce Jobs were listed online, and companies warted for applicants with lette much in reach out in under represented populations. The over exception was in the federal considering segment, where large con portaines continued to pay strict attention to increased diversity of workers as well as of the suppliers selected

Tabora sees this as well another opportunity. As the information technology infrastructure develops, it's repeating history much as did the building of the nation's nationeds and condways Taborn calls if first generation opportunity - first generation col lege graduates first generation IT workers. "These were national projects that in their infancy weren't standardized With ratinged the tracks weren't standard at first but moved in that direction. The came visuation early with IT is movement lowerd standardization

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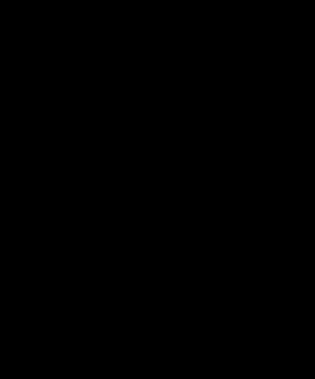
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IT Careers Diversity Report

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have't changed the face of its workforce. Turne Taboro, Investor and considered of Carper

Communications Group, Inc. (publisher of US Mack Engineer). says the data is clear about the situation. Less than 12% of the IT workforce is comprised of black Americans. There's a continund need for new employees, estamated at better than \$80,000 in 2003. Based on a black population that is 12% of the total American population, about 12,000 blacks should be entering

the IT workforce this year Yet, less than 2,000 blacks earned computer, electrical and systems ondineering degrees in 2002 factor to rethermosts, and the

message is clear - the shortage of IT workforce talent isn't getting any better, and among the factors Florida A&M State University is an inability to attract blacks to IT studies and careers Tabom says that compenses

that ache from the shortage of salant for software developers and systems interrutors soldion turn to an apparent source - black colleges and universities have

Country's Newest Industry Presents Same Face black IT graduates. That leaves plenty of room for improvement among the more than 300 other accredited degree programs in

attraction and material attentions (if shadows A number of testalives are underway to push as well as and produced, including the second annual FamilyRet event.

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tions are IT related. And, one number of all sub-growth through 2006 will come in IT "If's a that tech was just a fad." Taborn

says. "It has permeated every aspect of the American economy Opportunities do exist."

One of the arrors occurring during the det-com blast was that more attention was paid to hirtory people to push product and ser vice to market rather than developing a highly qualified workforce jobs were listed online, and companies waited for applicants with lettle push to reach out to under-represented populations. The one exception was in the federal contracting segment, where large cor workers as well as of the suppliers selected.

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upurade of DB2 Content Manseer in late April Version 8.2 has built-in integration with customer relationship management (CRM) applications from Siebel Systems Inc. and PeopleSoft Inc. That will let end users open documents and other types of

relational data from within the CRM software, said Brett MacIntyre, vice president of content management and information integration at IBM. The company also announced an upgrade of DB2 Records Manager, which tracks documents that need to be retained to comply with

quiring Ottawa-based Tarian Software Corp. in November. IRM said it plans to add a version of DB2 Content Manager for small and midsize companies by the third quarter. In the same time frame,

NEWS

the vendor plans to take initial steps to provide native integration with its Notes/Domino collaboration tools. Also IBM is tying DB2 Content Manager to its digital rights

management software, letting users enforce data privacy rules and control access to information when documents are sent beyond the users' own networks. David Holland, CIO at Gen-

esys Health System in Flint, Mich., said digital rights man arement will help Genesys ensure that it meets regulations governing the privacy of patient data when it sends medical records to other health care providers.

Genesys uses DB2 Content Manager with electronic medical records software developed by BlueWare Inc. in Cadillac, Mich, Some 600,000 documents are added to the system each month, Holland said. IBM's moves to integrate DB2 Cootent Manager with its other products are also belp-

ful. Holland said. "I'm not only a Content Manager shop," he ooted. "I'm also a Tivoli shop and a Notes/Domino shop and a WebSphere shop. As all these things come together, it just makes my life easier."

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regulatory requirements. The upgrade is IBM's first since it bought the technology by acis Clie Things From C

duction in the number of medication errors. That's because the bar-code stem provides multiple batch or disconnected mode. checks to ensure that a patient but be added that WLANs will receives the correct drug.

When nurses dispense med leations, they first scan a bar code on their badges and then the code on the patient's bracelet and finally the code on the drug. This information is sent to a back-and database which contains ostiont and prescription information.

Rough said the cost of wireless LANs could be spread over multiple applications, including computerized physician order entry systems and supply systems. While be declined to detail his costs to install the McKesson Admin-Rx system, he said a hospital his size should anticipate spending "a couple of million dollars over a five-year period."

Marybeth Navarra, director of potient safety at McKesson's Automation Group, called the FDA's bar-code regulations a "huge step forward" in the quest to eliminate patient errors. She said the regulations would also help break a standoff between pharmaceutical manufacturers, re-

sellers and hospitals over the use of har codes. The manufacturers didn't want to use bar codes because the hospi tals didn't have readers, while the hospitals didn't want to install the technology because so few drags had the bar codes Total costs for hardware and

software for a 125-bed hospital would run about \$200,000 Navarra said. A hospital that size with no wireless LAN, would add another \$50,000 to hardware costs, she said. The bur-code regulation

Continued from page 1 **Bar Codes** bar codes to drugs at a cost to

a 150-bed hospital of \$162,000 per year. That compares with a one-time cost of \$250,000 to equip the bospital with barcode technology and systems, she said Teff Schou, director of

worldwide health care markets at Symbol Technologies Inc. in Holtsville, N.Y., estimated that close to \$1 billion will be spent on wireless LAN technology to provide connecriviry for numes dispensing drugs bedside. Schou said there are roughly 6,000 hospitals in the country and only 7% of them have installed WLANs. He estimated the cost of installing WLANs at hospitals that lack such systems at between \$50,000 and

\$500,000 each, depending on the size of the facility. Schou said the bar code readers could function in a

> he the best way to manage the system. Steve Rough, director of nharmacy at the University of Wisconsin Hospital and Clinics in Madison, agreed, noting that batch mode doesn't provide nurses with real-time information - a key to medica-

tion management.
The University of Wisconsin started deploying a medication management system. Admin-Rx from San Francisco-based McKesson Corp., in December 2001. That system incorporates bar codes, and according to Rough, it will revolutionize patient care and safety. Rough said the hospital has experienced an 87% re-

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will go into effect three years after the FDA publishes its final rules. That's expected to happeo later this year, after the agency assesses comme filed in the next 90 days.

FDA Drug Bar-Code Rules:

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IBM's New

Content

upgrade of DB2 Content Man-Version 8.2 has built-in integration with customer relationship management (CRM) applications from Siebel Systems Inc. and PeopleSoft Inc. That will let end users open documents and other types of the CRM software, said Brett MacIntyre, vice president of content management and information integration at IBM The company also an-

nounced an upgrade of DR2 Records Manager, which tracks documents that need to be retained to comply with regulatory requirements. The upgrade is IBM's first since it bought the technology by ac-

nonrelational data from within | outring Ottawa-based Tarusa Software Corp. in November. IBM said it plans to add a version of DB2 Content Man

ager for small and midsize companies by the third quarter. In the same time frame the vendor plans to take initial steps to provide native integration with its Notes/Dumino collaboration tools. Also, IBM is tvine DB2 Content Manager to its digital rights

ve information stored in many

management software, letting users enforce data privacy rules and control access to information when documents are sent bewond the users' own networks.

Donal Holland CIO at Genesys Health System in Flint

Much, said divital rights management will help Genesys ensure that it meets regulations governing the privacy of patient data when it sends medical records to other health care providers.

Genesys uses DB2 Content Manager with electronic medical records software devel oned by Blue Ware Inc. in Cadillac, Mich. Some 600,000 documents are added to the sys tern each month. Holland said

1BM's moves to iotegrate DB2 Content Manager with its other products are also helpful. Holland said 'I'm not only a Content Manager shop," he noted, "I'm also a Tivoli shop and a Notes/Domino shop and a WebSphere shop. As all these

Management Software B2 CONTENT AMABER VERSION 8.2:

 Adds integration with Sieb Soft CRM applications, plus support for caching conjent on LANK

 Due to ship April 30 on Unix. Windows and main systems, costs \$24,000 nm capacitation \$2,000 for each

DB2 RECORDS MANAGER VERSION 2.1

. Adds Is integration with DB2 Content Manager and DB2 Universal Database, clut

a redesigned user interface. . Due to ship March 31 on Wedows 2000 servers, costs. \$24,000 per server, plus \$250

Data Chief Expects Big Things From Content Tools different places. When they want a coretion tends to con view of their customers, they don't went to move the information to a



Continued from page 1

Bar Codes

still a larger overall opportunity, but it's projected to grow in single digits. Content mens ieros as databases are.

central place. They went to be able to aggregate the information and jected to grow in the 20% to 30% access if from where if its now. range. Within the next couple of years, it will become almost as

- Craig Stedman

Why do you think your Xa in you arrest sales of DR2

> \$500,000 each, depending on the size of the facility. readers could function in a

bar codes to drags at a cost to batch, or disconnected, mode, a 150-bed hospital of \$162,000 but he added that WI ANs will per year. That compares with be the best way to manage the a one-time cost of \$250,000 to system equip the hospital with bar-Steve Rough, director of

pharmacy at the University of code technology and systems. she said Wisconsin Hospital and Clin-Jeff Schou, director of ics in Madison, agreed, noting that batch mode doesn't proworldwide health care man kets at Symbol Technologies vide nurses with real-time in-Inc in Holtsville, N.Y. estiformation - a key to medication management.

mated that close to \$1 billion The University of Wisconwill be spent on wireless LAN technology to provide connecsin started deploying a medtivity for nurses dispensing ication management system, drups bedside. Schou said Admin. Dy from San Erancia. there are roughly 6,000 hospico-based McKesson Corp., in December 2001. That system rate in the country and only 7% of them have installed incorporates bar codes, and WLANs. He estimated the according to Rough, it will revolutionize patient care and cost of installing WLANs at hospitals that lack such sys safety. Rough said the hospital has experienced an 87% retems at between \$50,000 and

duction in the number of medication errors. School said the har code That's because the bar-code

system provides multiple checks to ensure that a patient receives the correct drug. When nurses dispense medications, they first scan a bar code on their badges and then the code on the patient's on the drug. This information

prescription information. Rough said the cost of wireless LANs could be spread over multiple applications, including computerized physician order entry systems and supply systems. While he declined to detail his costs to install the McKesson Admin-Ry system, he said a hospital his size should anticipate spending "a couple of million dollars over a five-year period."

is sent to a back-end database,

which contains patient and

things come together, it just makes my life easier." > Marybeth Navarra, director of patient safety at McKesson's Automation Group. called the FDA's bar-code regulations a "huge step forward" in the quest to eliminate pa-

tient errors. She said the regulations would also help break a standoff between pharmacentical manufacturers, resellers and hospitals over the use of bar codes. The manufacturers didn't want to use bar codes because the hospitals didn't have readers, while the hospitals didn't want to install the technology because so few drugs had the bar

Total costs for hardware and coffware for a 125-bed hospital would run about \$200,000. Navarra said. A hospital that size with no wireless LAN, would add another \$50,000 to hardware costs, she said. The bar-code regulations

codes

will go into effect three years after the FDA publishes its final rules. That's expected to happen later this year, after the agency assesses comments filed in the next 90 days.

FDA Drug Bar-Code Rules FRANK HAYES . FRANKLY SPEAKING

Outsourcing Angst

IVER PAUL IS WORRIED, and he has reason to be. He figures the clock is ticking on the software engineers who work for him today. Paul told a reporter last week that in as little as two years, it may be possible for much of that programming to be done in another country for a lot less money. In other words, Paul is facing the same off-

try for a lot less money. In other words, Paul is facing the same offshore outsourcing threat as many U.S. programmers. But Vivek Paul runs Wirro, one of India's biggest software devel-

But Vivek Paul runs Wipro, one of India's biggest software development outfits. And he's looking over his shoulder at offshore programmers in Vietnam, China and the Philippines.

Paul told the AFP news service that salary costs in India are going up and that the seriousby undervalued rupee could gain 20% to 30% against the dollar. That would eat away at the cost advantages of offshoring programming work to India.

work to India. Meanwhile, programming companies in other lower-wage countries figure they can move into the vacuum as Indian costs rise. They're building their own armies of C - and Java programmers and aiming to do to the Indian software business what India is doing to us. All of which is good news for U.S. IT decarri-

ment budgets. And it's actually not such bad news for U.S. programmers, either. It's good news for IT budgets because competition will drive down the price of offshore software development. Right now, a typical big project costs. Mb. her; in folia who; it would

persion will arrive advant the price of osistante software development. Right now, a typical big project costs 30% less in India than it would using U.S. outsourcers. That's largely because a typical Indian software engineer makes 88% less than a U.S. programmer. (Long-distance development adds other costs that reduce the potential savings.)

potential savings.)

If programming shops in the Far East can
mimic the Indian approach — which they're

mimic the Indian approach — which the busy trying to do right now — the number of alternatives for an IT shop that's offshoring a big project will go way up. Competitive bidding will cut offshoring prices to the bone. Learn-and-buegy not comers will keep the old-guard offshorers honest and on their toes.

That means we'll spend less and get more for the money we do spend. And who knows, maybe we'll even get to plow the savings into interesting new technologies.

we'll even get to plow the savings into interesting new technologies. On the other hand, for U.S. programmers facing an uncertain future, this may sound like the worst possible news: one more nail in the coffin for code jockeys who see their jobs evaporating as projects are shipped overseas. But don't kid yourself. There wasn't that much left to lose.

Look, we can't compete for projects that can be shifted offshore — not without some kind of programming fairy dust. Conting an American programmer's salary by 30% to match off shoring prices in a viable option. Nor can U.S. companies simply decide not to send any projects offshore. No business can stay in the game while competitors get lower costs and greater flexibility on a key commodity, which is

what big-project programming has become. Offshoring is real, it's going on, and it's going to get bigger. There's a glut of generic programming tabent workdwide, and the Internamales it possible to tap that glut for big-projects that need generic programmers. Within a few years, if a project can be offshored, it will be — whether it's to India or Russia or China or the Philippines.

So if you're a programmer in a U.S. IT shop, the future isn't really uncertain at all. It's a dead certainty that generic, big-project coding

no longer has a future for you. And it's certain that you'll need to shift away from a pure coding focus, and toward smaller projects that require faster turnaround, specialized skills or an intimate knowledge of your organization — in short, the things offshore code shops can't compete with.

That way, you'll be able to add more IT value than ever. And you won't have to look over your shoulder anymore.

You can let the offshorers do

What's Really Important

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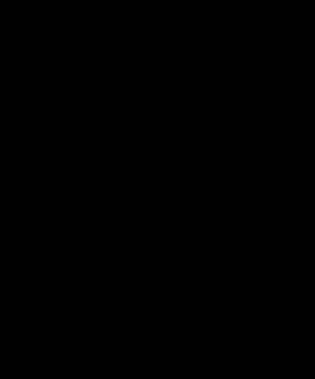
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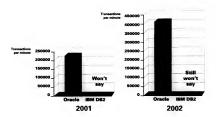
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Still What's the fastest database on IBM's fastest computer



When IBM wanted to show off their fastest computer, IBM chose Oracle.



ource: Transaction Processing Performance Council (TPC) www.tpc.org s of August 14, 2002: 60M aServer pSerios 600, 400,255 46 tpmC, 17.80tpmC, evaluate 11/22/02, 60M aServer pSerios 600, oracle.com/ad or call 1.800.633,1062

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